USER MANUAL FOR
SX-3000 STANDALONE INTEGRATED MEDIA BLOCK™
(SHORT FORM VERSION)

SMS version 9.0

March 6, 2013

SX-3000 Standalone Integrated Media Block™

GDC Technology's Standalone Integrated Media Block™ ("IMB"), the SX-3000, the industry's first Standalone IMB™ eliminates the need for an external file server.

TABLE OF CONTENTS

1. INTRODUCTION 8
1.1. About This Manual 8
1.2. Safety Instructions 9
1.2.1. General Safety Instructions 9
1.2.2. Electrical Safety 9
2. SMS 10
2.1. About the SMS Interface 10
2.2. Accessing the SMS Interface 10
2.3. Understanding the SMS Interface 11
2.3.1. Main Menu 11
2.3.2. Playlist Menu 13
2.3.3. Scheduler Menu 16
2.3.4. IMB Network Tab 17
2.3.5. IMB Storage Tab 19
2.4. Show Playlist 20
2.4.1. Create a Show Playlist 20
2.4.2. Editing Cues 20
2.4.3. Saving the Playlist 25
2.5. Show Schedule 26
2.5.1. Schedule a Show 26
3. CONTROL PANEL 32
3.1. About Control Panel 32
3.2. Control Panel Menu 33
3.3. Manual Automation Execution 34
4. CONTENT MANAGER 36
4.1. About the Content Manager 36
4.1.1. Introduction 36
4.1.2. Accessing the Content Manager 36

4.2. Content Management 37

4.2.1. Ingesting Content 37

4.2.2. Ingesting Content from USB Disk 39

4.2.3. Ingesting KDMs 41

4.2.4. Monitor Ingest Progress 42

4.2.5. Cancelling Ingest 43

4.2.6. Deleting Content 44

4.2.7. Checking Content Integrity 45

4.3. KDM Management 50

4.3.1. Manage KDM 50

5. IMB OPERATION NOTES 51

5.1. Power Up Sequence 51

5.2. Power Down Sequence 51

Thank you for purchasing a GDC SX-3000 Standalone Integrated Media Block™ from GDC Technology Limited.

To ensure proper operation and to maximize the IMB's value, please review this short form User Manual. It will guide you through all the features and benefits of the new SX-3000 Standalone Integrated Media Block™. The full version of the user manual is available on the accompanying CD.

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This manual is made with SMS version 9.0 and there might be slight differences depending on the software version the IMB is running. The contents, features and specifications stated in this manual are subject to change without notice due to continuous product development and improvements. In no other event shall GDC Technology Limited be liable for any loss of profit or any other commercial damages, including but not limited to special, consequential, or other damages.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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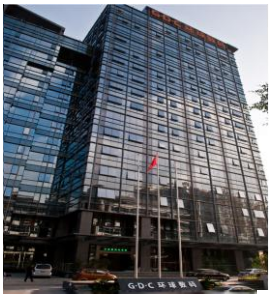

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1. INTRODUCTION

1.1. About This Manual

This user manual provides instructions on how to use and manage the GDC SX-3000 Standalone Integrated Media Block™ (“IMB”). The user interface of the IMB consists of a few key components described in the diagram below **[Figure 1]**. The manual has sections on each of these components describing how it can be used to operate the IMB.

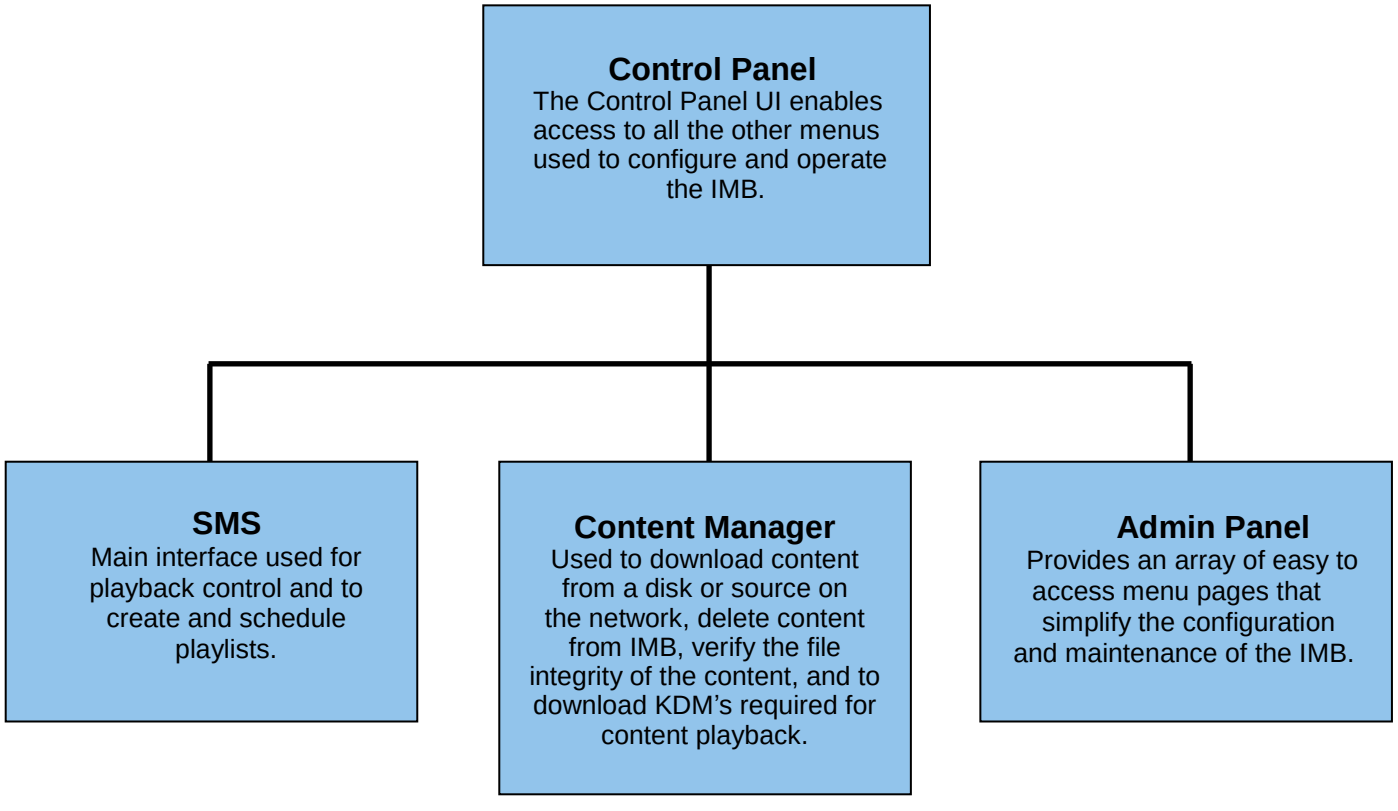

Control Panel
The Control Panel UI enables access to all the other menus used to configure and operate the IMB.
SMS
Main interface used for playback control and to create and schedule playlists.
Content Manager
Used to download content from a disk or source on the network, delete content from IMB, verify the file integrity of the content, and to download KDM’s required for content playback.
Admin Panel
Provides an array of easy to access menu pages that simplify the configuration and maintenance of the IMB.

Figure 1 IMB UI components.

1.2. Safety Instructions

1.2.1. General Safety Instructions

- The IMB is intended for installation in a restricted access location.
- The operation environment required for the IMB should be 0ºC - 40ºC (32ºF - 104ºF).
- For PLUGGABLE EQUIPMENT, the socket outlet should be installed near the equipment and should be easily accessible.
- Before operating your IMB, please read this manual thoroughly, and retain it for future reference.
- Installation and preliminary adjustments should be performed by qualified GDC Technology personnel. All warnings on the IMB and in the documentation manual should be adhered to.
- All instructions for operating and maintaining the IMB must be followed closely.

1.2.2. Electrical Safety

Safety Warning

- Do not expose the IMB to rain or moisture, to prevent fire or electrical shock hazard.
- Use a dry cloth when cleaning the IMB.
- Do not block any ventilation openings.
- Do not install near any heat sources (e.g. radiators, stove or other apparatus that produce heat).
- Consult Tech Support for servicing or maintaining the IMB.
- You are cautioned that any change or modification not expressly approved in this manual or approved in writing by an authorized representative of GDC Technology could void your warranty and/or authority to operate this IMB.

2. SMS

2.1. About the SMS Interface

The SMS interface is used for playback control, creating and editing playlists, scheduling and also provides access to advanced configuration options.

2.2. Accessing the SMS Interface

Figure 2 SMS interface.

1	Enter the user password to access the ***SMS*** interface as seen in Figure 2.

2.3. Understanding the SMS Interface

2.3.1. Main Menu

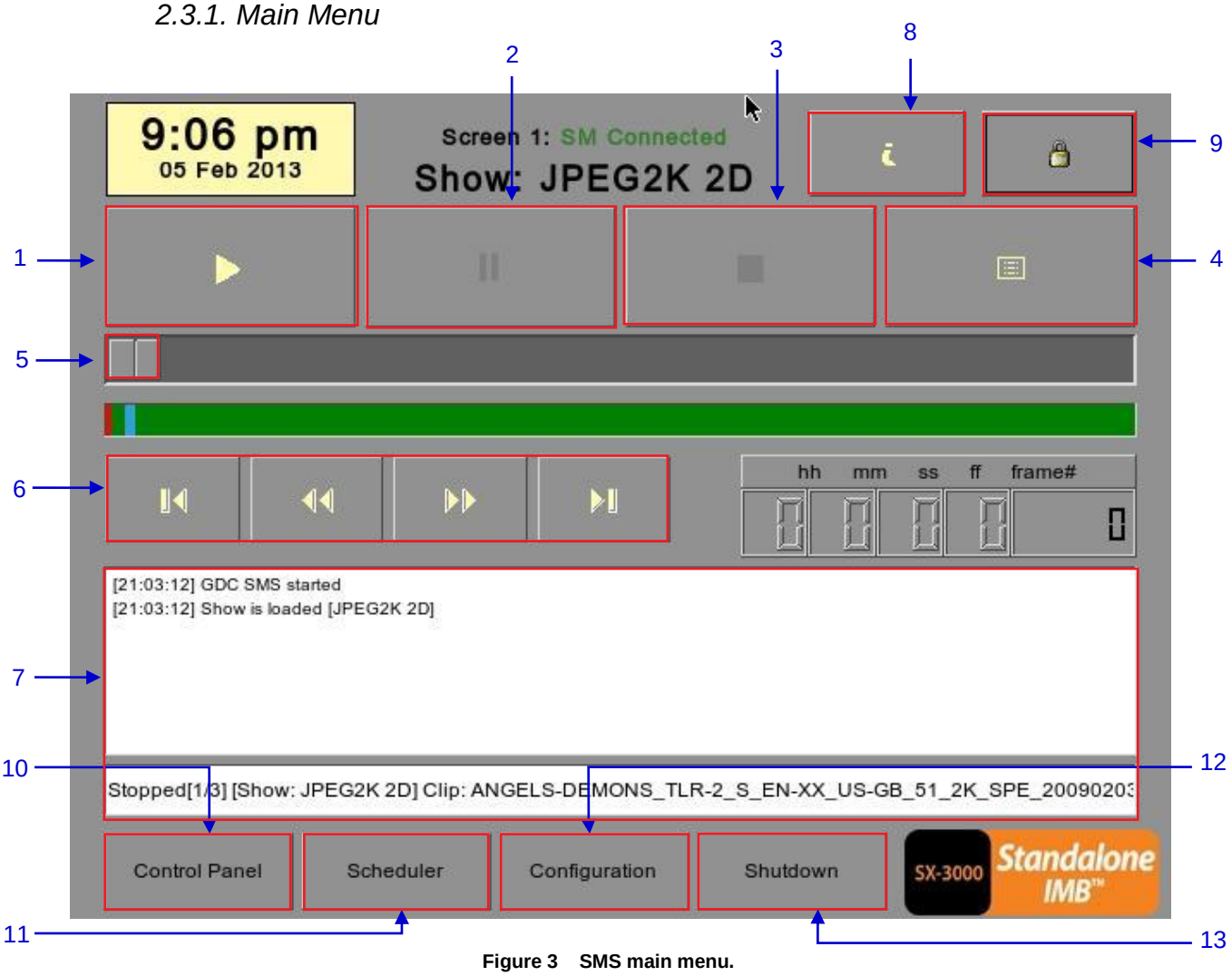
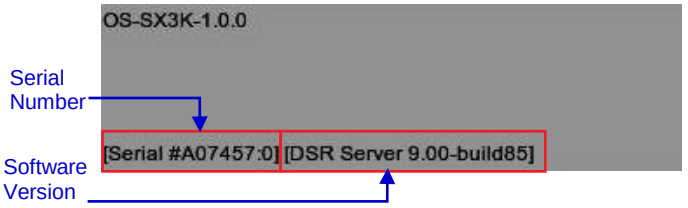


Figure 3 SMS main menu.

1	[▶]	Play button. The [▶] button starts playback when pressed, and is disabled when the system is in paused mode.
2	[II]	Pause button. The [II] button is enabled when the system is in playing or pause mode. To resume from pause simply hit the Pause button again.
3	[■]	Stop button. The [■] button is enabled when the system is in playing mode, and stops playback when pressed.
4	[☰]	Playlist button. Press [☰] to open the Playlist menu to create a playlist. For more information about the Playlist menu, please refer to Section 2.3.2. Playlist Menu further below.

5	[Slider Bar]	It will start advancing when [▶] is pressed to start a playback. One clip will take one complete cycle from the left to the right. The Slider Bar always returns to the starting point (extreme left) after a clip is finished. When [■] is pressed, the Slider Bar will stop and return to its starting point. When playback is paused, the Slider Bar can be moved. The Slider Bar can be moved to the left (for rewinding) or to the right (for forwarding).
6	[/◀] [⏮] [⏭] [▶]	Move to the first frame of the clip. Rewind (move back) by the number of frames of the playback. Forward (move forward) by the number of frames of the playback. Move to the last frame of the clip.
7	[Status Display]	Reports the status of the system. The display shows the number of clips in the active playlist, the name of the active playlist, and the name of the clip currently being played.
8	[*i*]	INFORMATION button. If [*i*] is pressed when the system is in stopped mode, the system will show the serial number and the software version of the IMB. A text box will appear beside the Timecode Display (replacing the navigating buttons [/◀][⏮] [⏭] [▶]) and the text box will show the serial number and software version of the IMB. 
9	[🔒]	SCREEN LOCK button - The SCREEN LOCK function will prevent any unintentional screen touches or mouse clicks that could disturb playback. The screen will be locked when [🔒] button is pressed. No access to the Main Menu (or associated menus) is allowed when the screen is locked. The User level password or higher is needed to unlock the screen. If the screen is locked while the system is playing, the name, duration and the remaining time of the clip will be shown on the screen while the clip is playing.
10	[Control Panel]	CONTROL PANEL button – For returning to the control panel screen of the user interface.
11	[Scheduler]	SCHEDULE button – For scheduling the time and date of the playlists to be shown. The playlist can also be looped for a period of time. For more information about Scheduler, please refer to Section 2.3.3. Scheduler Menu.
12	[Configuration]	CONFIGURATION button – For changing the general options on the system (e.g. enable startup/ shutdown password, change access level passwords, perform software upgrade, etc.).
13	[Shutdown]	SHUTDOWN button. For shutting down the IMB or restarting the application.

2.3.2. Playlist Menu

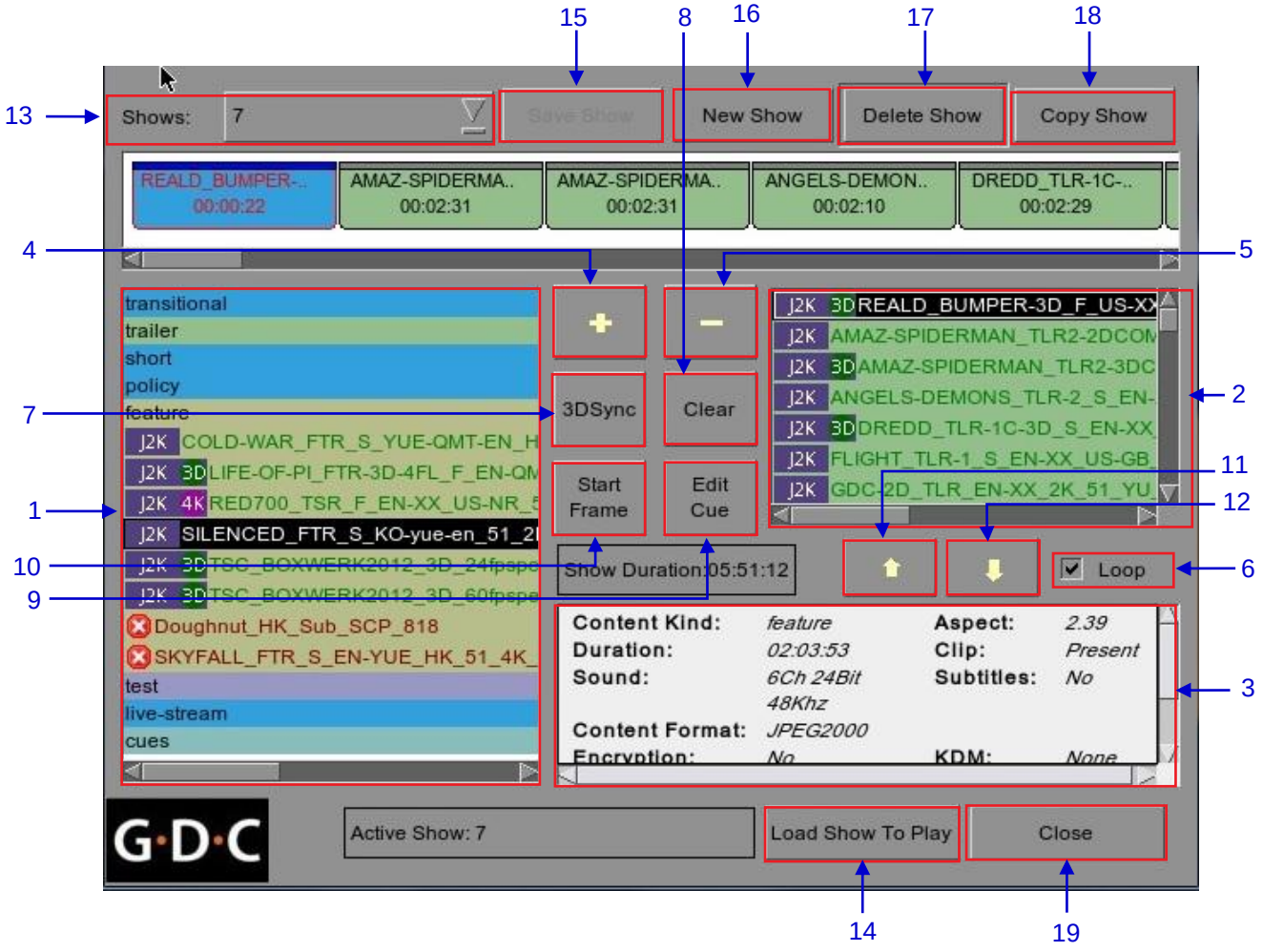
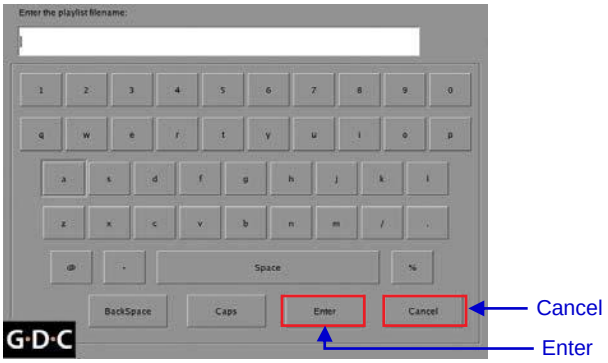


Figure 4 Playlist menu.

1	[IMB Content]	The IMB content is listed here. Content is shown in alphabetical order grouped by [Trailer, Feature, etc]. Available automation cues are listed under cues.
2	[Playlist Content]	The contents of the playlist being currently edited are shown here.
3	[Clip Information]	Displays information about the selected item in the Content. This includes the Name, total Duration, Sound (Audio) format, Content format, if Encryption is present, if a Composition Playlist exists, if it has Subtitles and if a current KDM is on the IMB.
4	[+]	Adds content to the Playlist by pressing [+] after an item from the Content is selected.
5	[-]	Removes the selected item from the Playlist content.

6	[Loop]	When [Loop] is selected, the contents in the Playlist will run continuously in a loop when [▶] is pressed.
7	[3D Sync]	Synchronizes clips for 3D showing.
8	[Clear]	Removes all clips on the playlist.
9	[Edit Cue]	Click the Edit Cue button to bring up the cue editing interface, used to add, remove or edit existing automation cues for the selected clip in the playlist (See Section 2.4.2.).
10	[Start Frame]	Allows specifying the timecode or frame number where playback of each clip starts in this playlist.
11	[🡅]	Moves the highlighted clip in the Playlist ahead in chronological order. Makes sure an item is selected from the Playlist before pressing [🡅]. When [🡅] is pressed, the selected item will move to before the previous clip.
12	[🡇]	Moves the highlighted clip in the Playlist down in chronological order. Makes sure an item is selected from the Playlist before pressing [🡇]. When [🡇] is pressed, the selected item will move to after the next clip.
13	[Shows]	This displays a list of all the playlists saved. Selecting a playlist here displays the contents of the playlist for editing. A playlist that is currently playing may not be edited. ***NOTE:*** *Selecting a playlist here does not load it for playback. The "Load Show to Play" button has to be pressed to load the playlist into the player for playback.*
14	[Load Show To Play]	Loads the selected playlist into the player for playback.
15	[Save Show]	Saves the playlist currently being edited.
16	[New Show]	Creates a new blank show playlist. A name must be specified for the playlist.
17	[Delete Show]	Make sure an item is selected in the Shows drop-down menu. When [Delete Show] is pressed, the system will delete the selected playlist and remove it from the Shows drop-down menu. The delete action is irreversible. The system will prompt you to confirm the delete action before it proceeds to delete the playlist.
18	[Copy Show]	Duplicates currently selected playlist. When [Copy Show] is pressed, a text entry keypad will appear for you to enter the new name of the duplicate playlist.

		 Type in the desired name and press [Enter] to complete the action. To cancel the action and return to the previous screen, press [Cancel].
19	[Close]	Exits the Playlist menu and returns to the Main menu.

2.3.3. Scheduler Menu

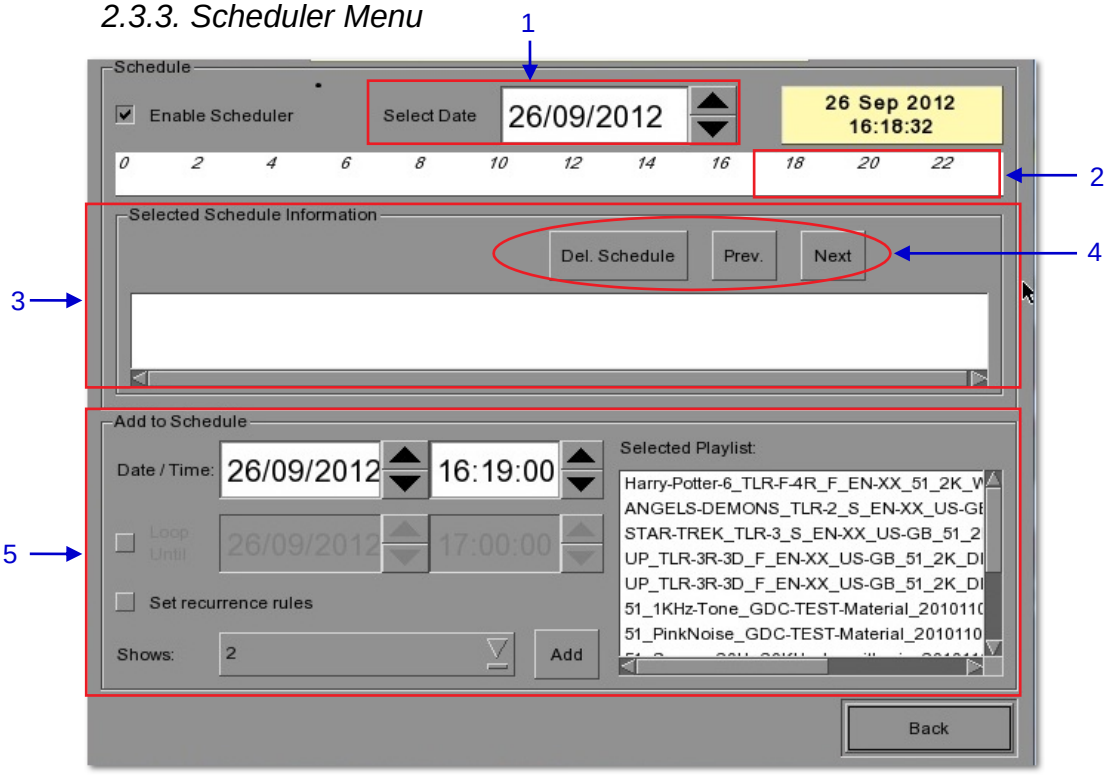


Figure 5 Scheduler menu.

1	[Select Date]	Specifies the date and time of the schedule.
2	[Timeline]	Displays shows scheduled on a 24-hour timeline for the date selected in (1).
3	[Selected Schedule Information]	Displays information such as name, time and duration of the selected show schedule.
4	[Delete Schedule] [Previous], [Next]	Deletes the currently selected show schedule. Navigate show schedules by going forward and backward one at a time.
5	[Add to Schedule]	(a) Select the playlist to be scheduled. The contents of the selected playlist will be displayed in the “Selected Playlist” window. (b) Select the time for the scheduled show. (c) To loop the show until a certain time, check ‘Loop until’ and select the time. (d) If the schedule is to be repeated every day or week, check ‘Set recurrence rules’. (e) Press the ‘Add’ button. A dialog will pop up for specifying the recurrence rules if it was checked.

2.3.4. IMB Network Tab

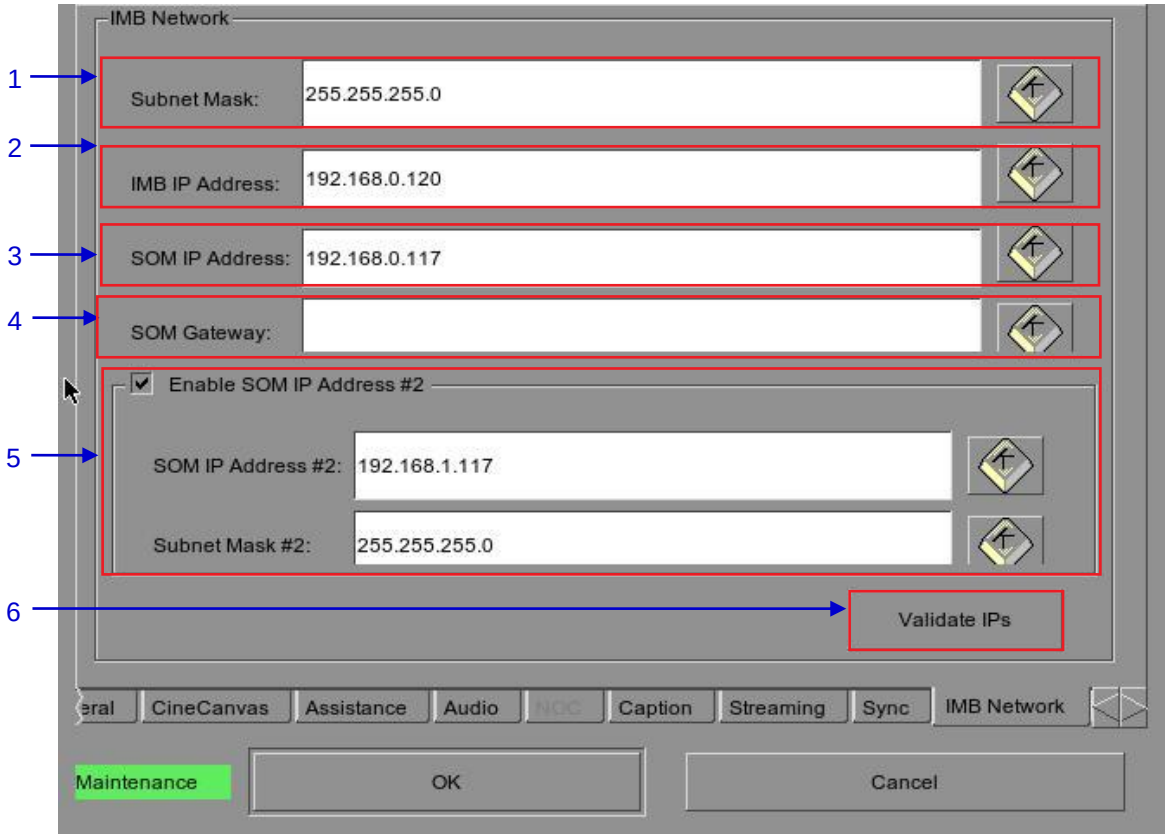
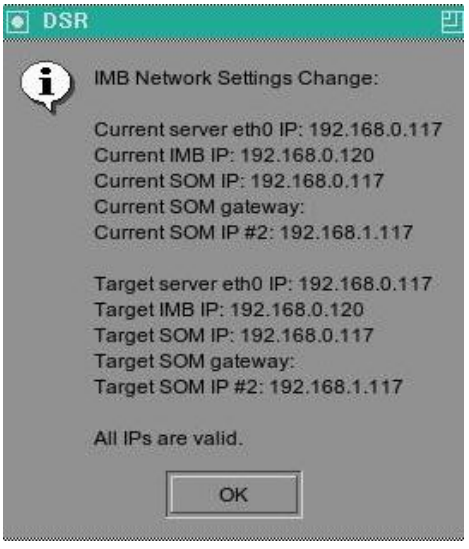


Figure 6 IMB Network Tab.

1	Specify the subnet for all IP addresses
2	Specify the IP address of the IMB. This is the IP address of the Security Manager.
3	This is the main IP address of the SX-3000. The SMS user interface can be reached at this IP address using VNC.
4	Specify the network gateway for the SX-3000.
5	Specify a secondary IP address and netmask for the SX-3000. This can be used to connect to a content management network.

6	Click to check all IP addresses entered above for correctness. A dialog will be displayed showing the source and target IP addresses, and any errors found in the new network configuration as shown below.



2.3.5. IMB Storage Tab

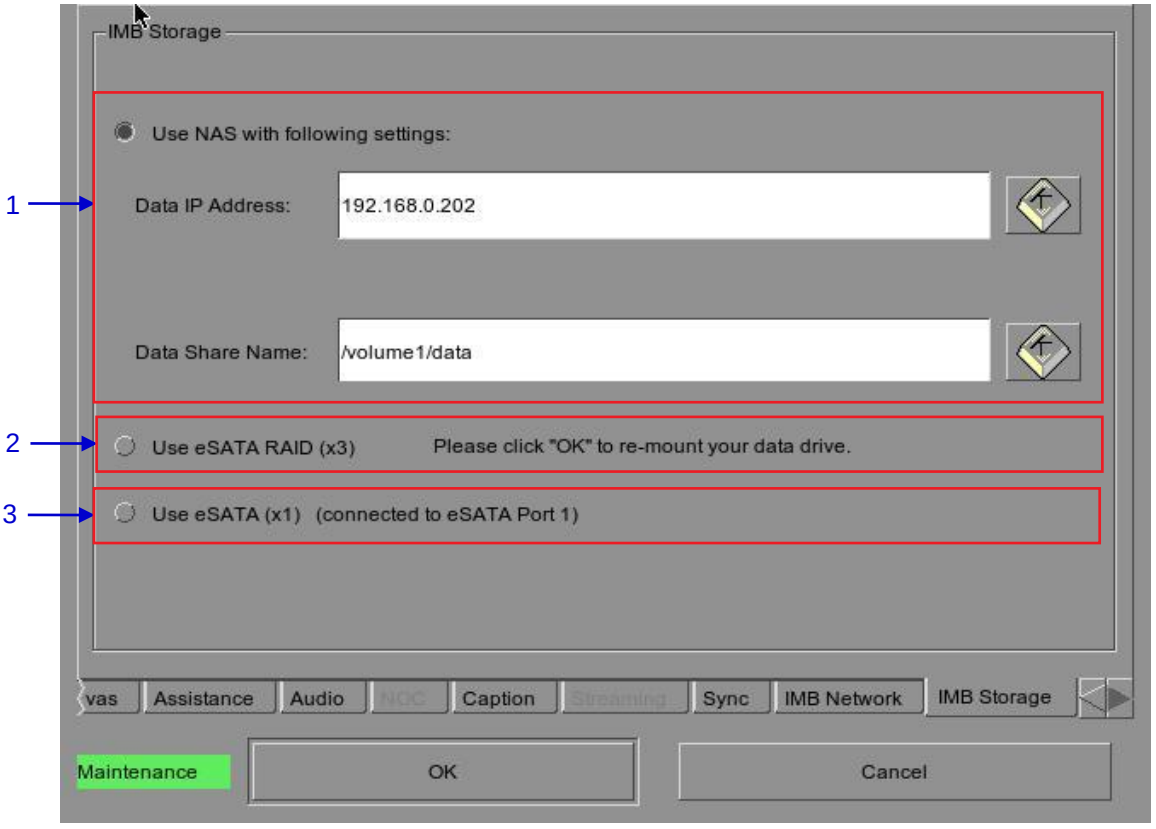


Figure 7 IMB StorageTab.

1	Specify a Network-Attached Storage System (NAS) which has an NFS share available to this SX-3000 system for the use as data storage.
2	Configure the SX-3000 to use an attached eSATA RAID as data storage. This is to be used with PSD-3000.
3	Configure the SX-3000 to use a single externally attached eSATA hard disk as data storage. The external eSATA hard disk must be attached to eSATA Port 1 on the SX-3000.

2.4. Show Playlist

2.4.1. Create a Show Playlist

2.4.2. Editing Cues

Figure 8 Playlist menu.

1	To edit a cue of a composition on the playlist, select the desired composition from the Playlist menu and press Edit Cue. A new window displaying the Edit Cue menu opens as seen in **Figure 9**.

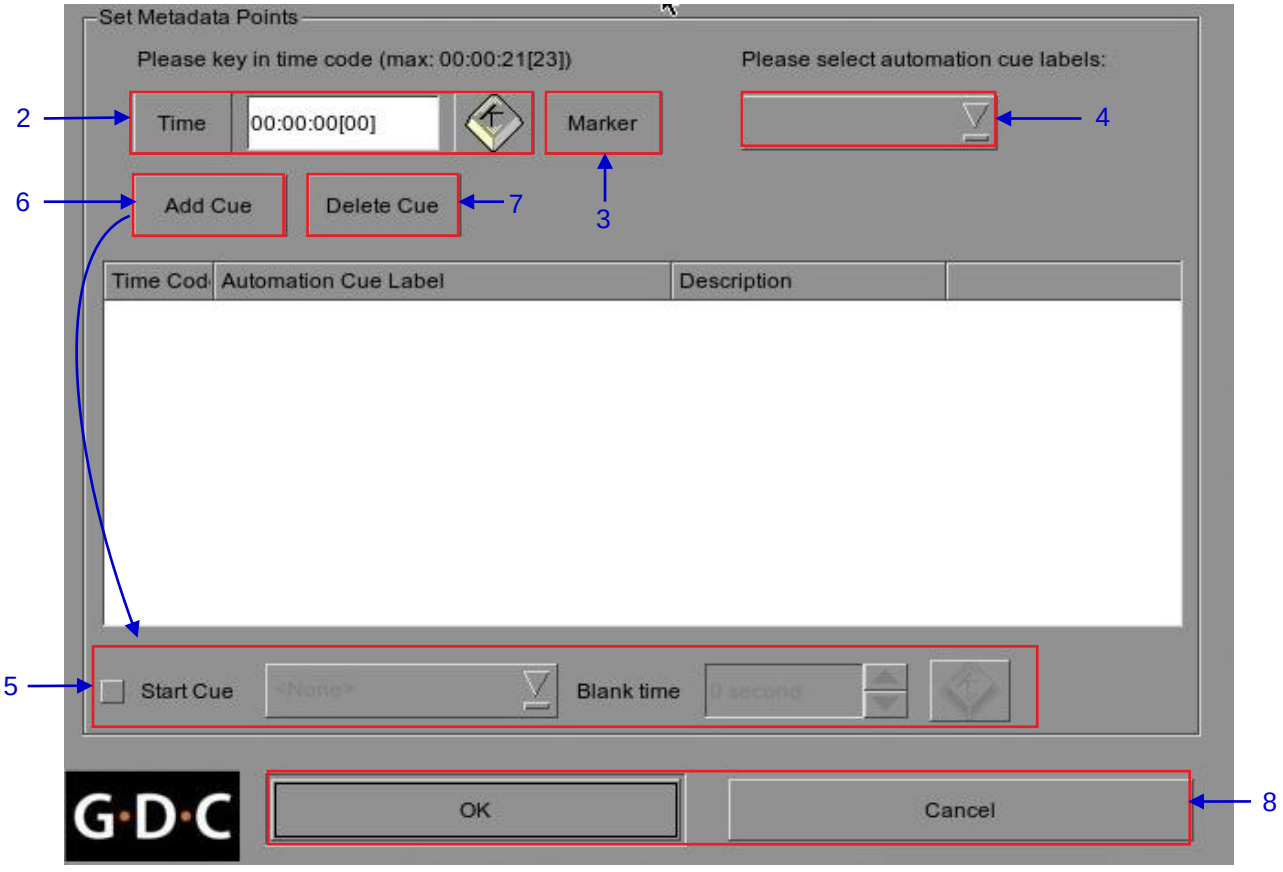
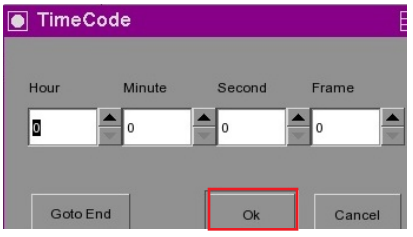


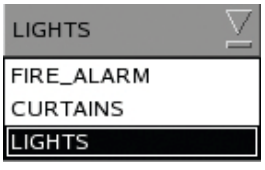
Figure 9 Edit Cue menu.

2

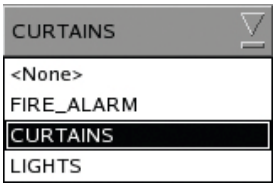
To specify a time code for the activation of the cue, press and a time code entry window will open. Use the [▲] and [▼] buttons enter the desired time code. Press OK to confirm your selection.



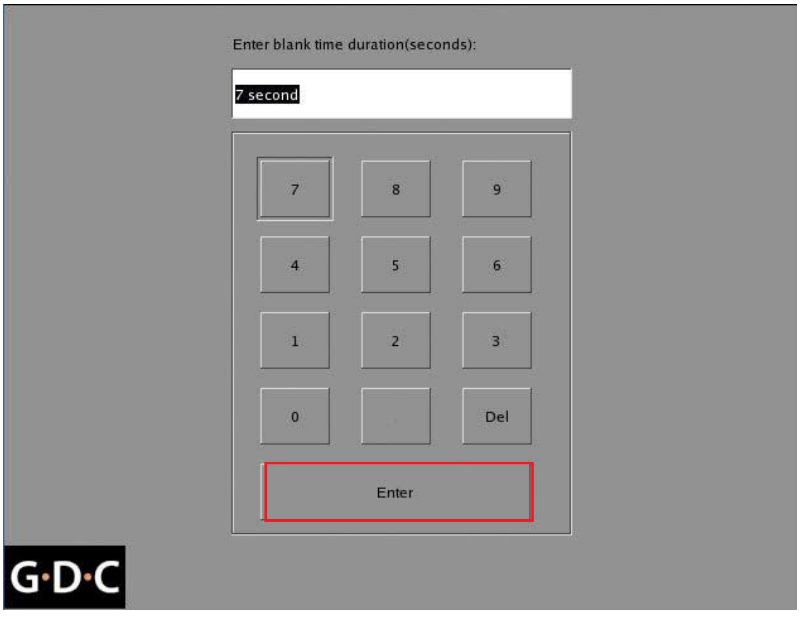
To specify a frame for the activation of the cue, press the Time button once and it will toggle to display the Frame button as shown below.

	Press and a frame number entry window will open. Key in the desired frame number and press Enter.
3	Press Marker to view any markers present in the composition. If the composition does not contain any markers, a small window pops up to indicate that there are no markers present.
4	To add an automation cue label, select the desired automation cue label from the dropdown list as seen below. 

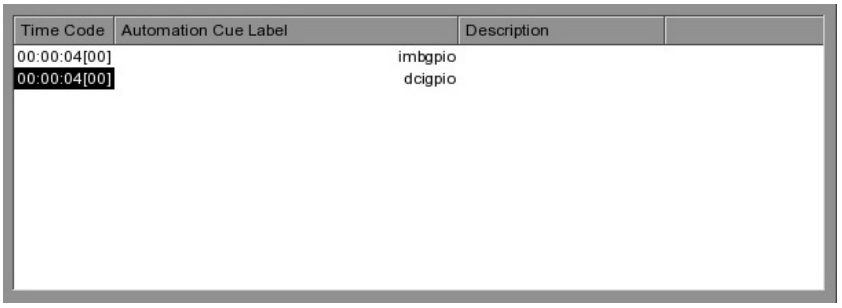
5 To add a start cue, tick the Start Cue option and select the desired automation cue label from the dropdown list as seen below.



To specify the blank time, press and a blank time entry window will open. Key in the desired blank time and press Enter.



NOTE: *A start cue is activated immediately before the composition plays. The blank time indicates the time interval between the end of the start cue and the start of the composition's playback.*

6	Press Add Cue to add the cue to the composition. The cue's details will then be displayed in the cue window as seen below  ***NOTE:*** *You can select a cue from the cue window at any time to edit its properties.*
7	To delete a cue from the composition, select the cue from the cue window and press Delete Cue.
8	To save the changes and exit, press OK. To exit without saving any changes, press Cancel.

2.4.3. Saving the Playlist

Figure 10 Saving the playlist.

1	Press Save Show to save the playlist. This ensures any changes to playlist will not be lost.
2	Press Load Show to Play and return to the Main menu.

2.5. Show Schedule

2.5.1. Schedule a Show

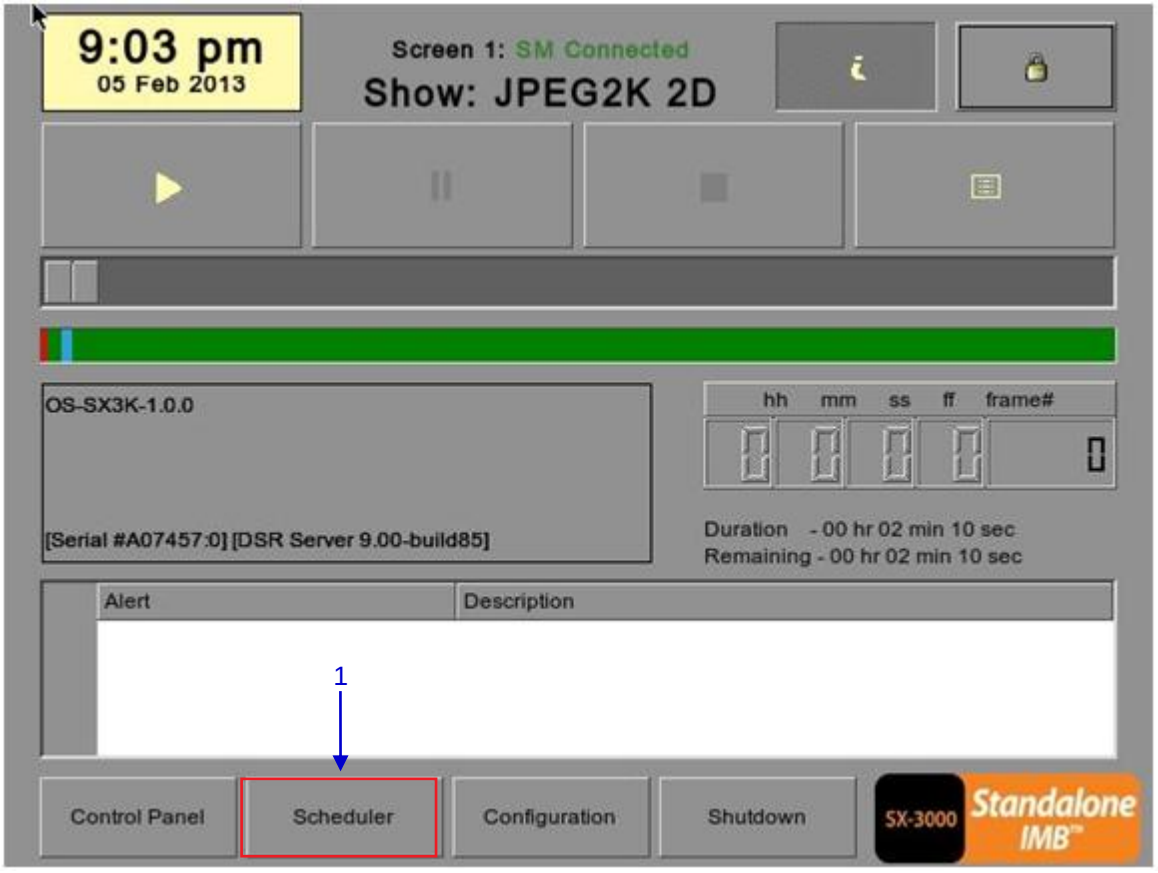


Figure 11 SMS Interface [Scheduler].

1	On the Main menu, press Scheduler. A new window opens as seen in **Figure 12**.

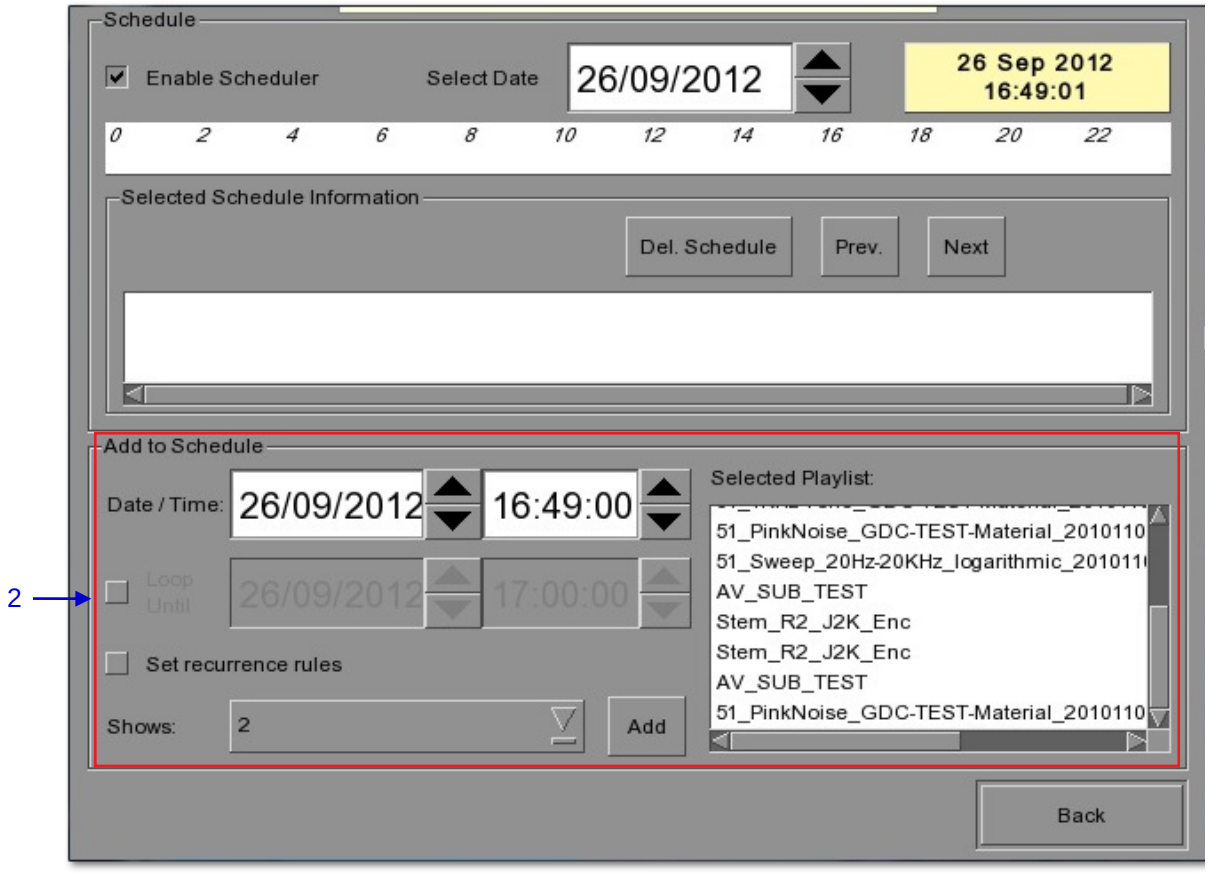
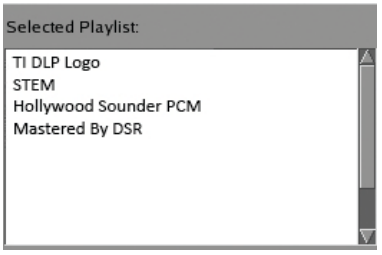


Figure 12 Scheduler menu.

2	Go to the bottom section named Add to Schedule. At Date / Time, indicate the date and time to schedule the show. (a) The date format is DD/MM/YYYY and the time format is HH:MM:SS. To select the day, click on DD and adjust to the required day using [▲] and [▼]. Repeat the same for MM, YYYY, HH, MM and SS. (b) At Shows, select the playlist for the show. Press [▼] to view all the playlists already saved in the IMB. Select the required playlist.

(c) The Selected Playlist column on the right displays the clips in each playlist.



(d) If you want the playlist to loop for a period of time, check Loop Until and indicate the date and time to end the loop.

(e) Press Add after the schedule date/time is fixed and playlist is selected.

(f) If the new show schedule does not conflict with other schedules already saved to the IMB, the schedule will be added to the existing list of schedules in the IMB.

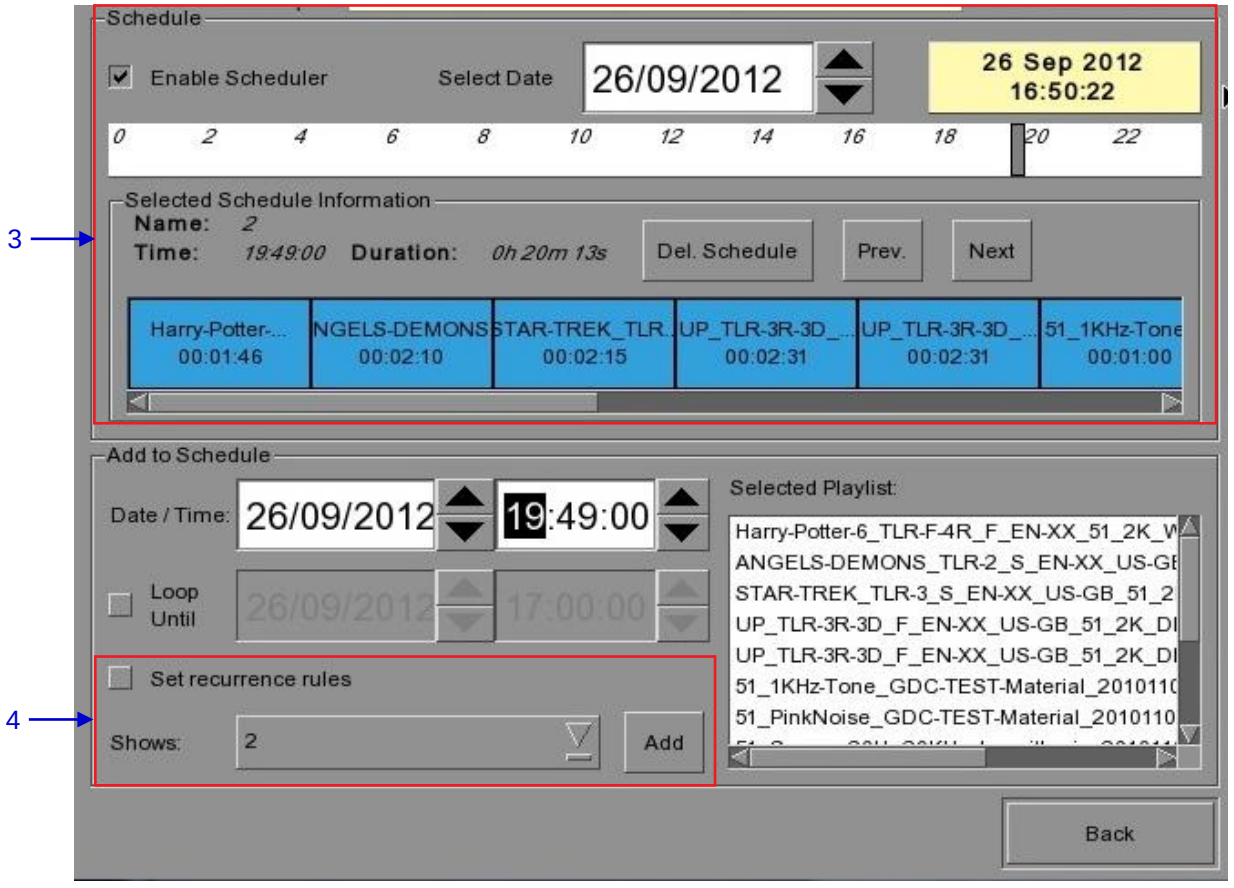
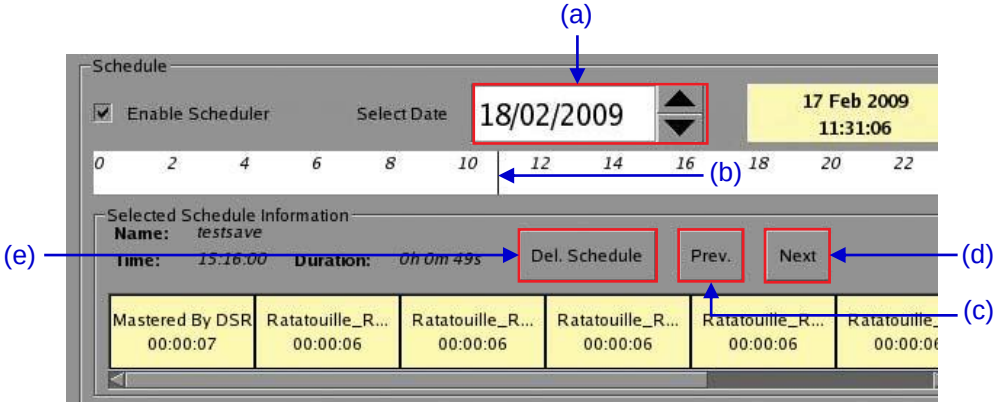


Figure 13 Viewing schedule information.

3	Check the Enable Scheduler checkbox to enable scheduled playback  (a) At Select Date, indicate the date of the schedule. You should see a line on the time-bar at the slot where the show is scheduled. (b) Click on the line. Information about the show such as name, time and duration will be displayed in the Selected Schedule Information column beneath the time-bar. (c) To navigate to the previously scheduled show just before the selected show, press [Prev]. (d) To navigate to the succeeding show scheduled after the selected show, press [Next]. (e) To delete a show schedule from the time-bar, just click on the relevant color bar and press [Del. Schedule].
4	To replicate the same show schedule on other days, check Set recurrence rules and press Add.

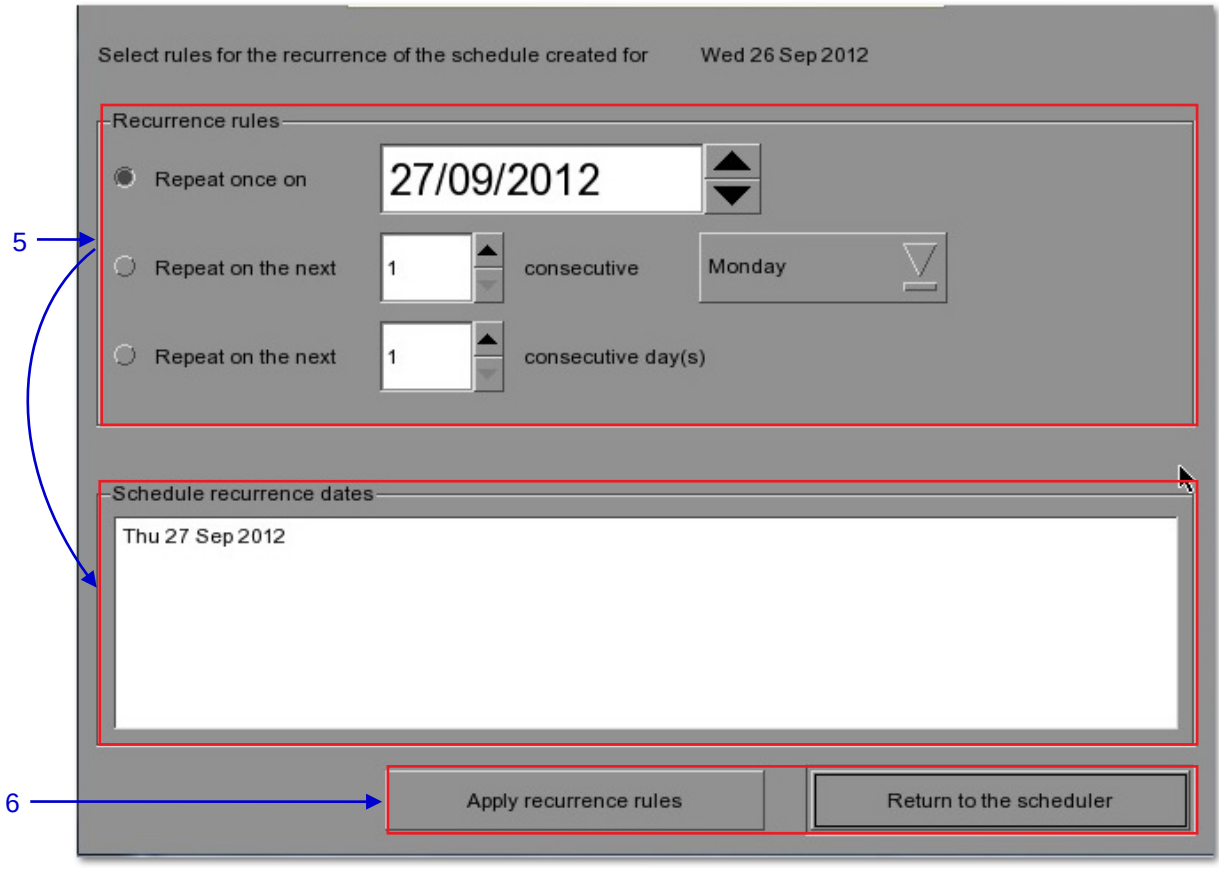


Figure 14 Replicating show schedule.

5	A new window opens as seen in Figure 14. Select the required recurrence option. Only one option can be selected. Upon selection, all effective recurring dates will be listed in the Schedule recurrence dates column at the bottom.
6	Press Apply recurrence rules to schedule the recurrence dates. If no option is selected, press Return to the scheduler to return to Scheduler menu. When on Scheduler menu, press Back to return to the Main menu.

3. CONTROL PANEL

3.1. About Control Panel

The Control Panel UI provides access to all the other menus used to configure and operate the SX-3000 IMB.

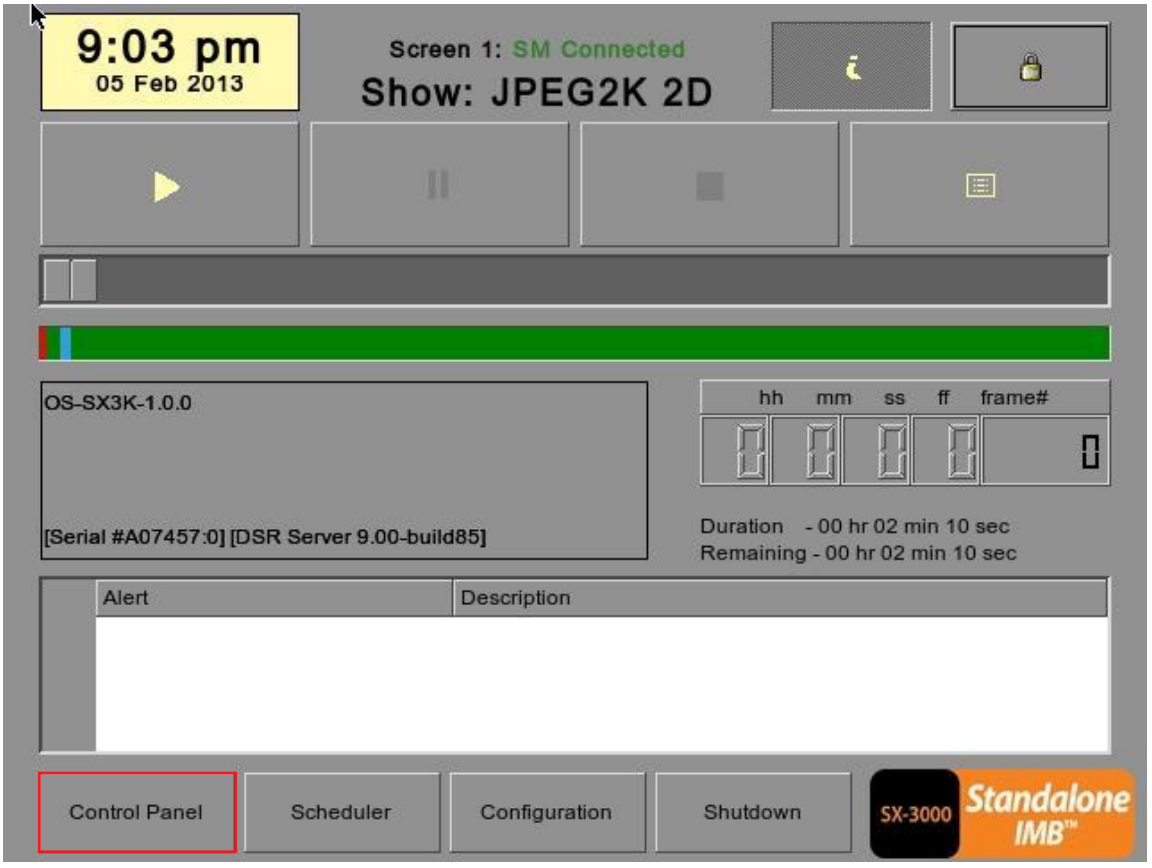


Figure 15 Control Panel menu.

3.2. Control Panel Menu

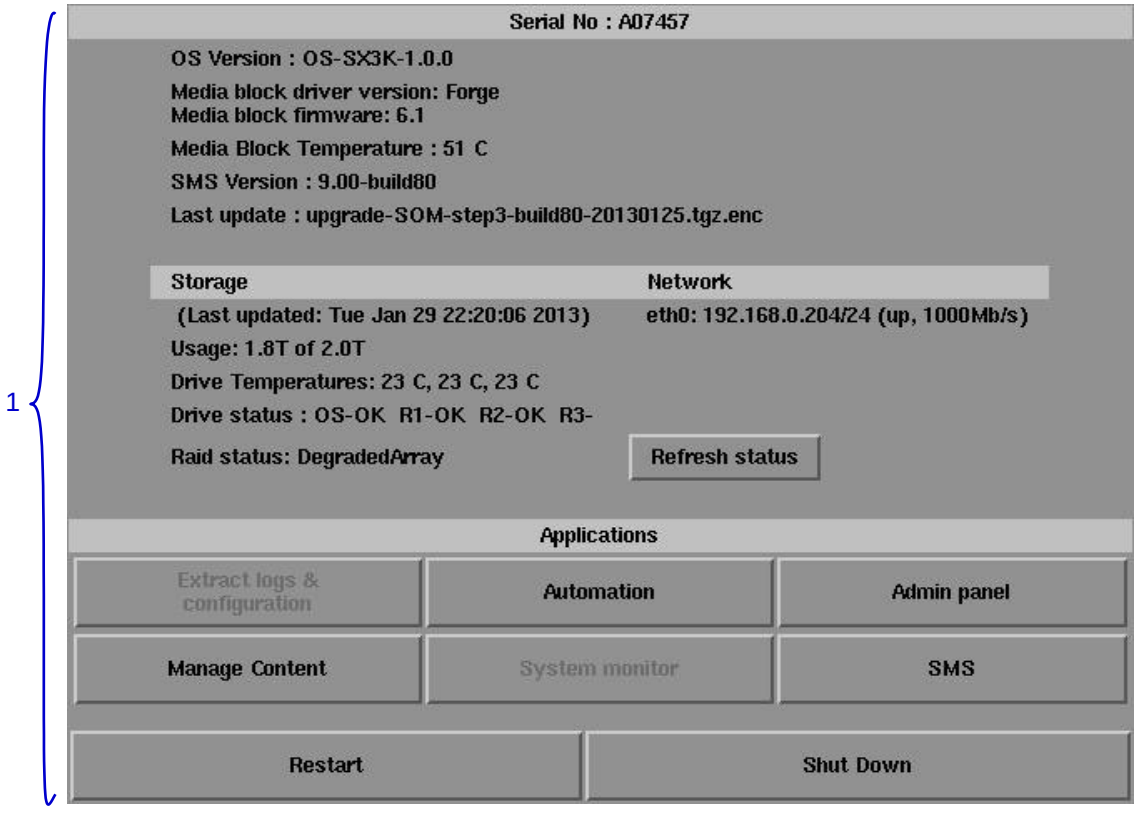


Figure 16 Control Panel menu.

1	Switch **ON** the IMB and allow it to boot up to prompt directly to the SMS interface. When the SMS interface is shown, press the Control Panel button and a new window for the Control Panel menu opens as shown in **Figure 16**. The Control Panel includes the Automation button, Admin panel button, Manage Content button, SMS button, Restart button, Shutdown button and a Refresh status button. System information including the serial number, OS version, SMS version, network and storage information can also be seen on the Control Panel UI. ***NOTE:*** *The Refresh status button is used to manually refresh the status of the hard disks in the external storage device. This button should not be pressed during playback to prevent disruption of playback.* The SMS software continues to run in the background when using the Control Panel. This allows access to other IMB functions when playback is in progress. It is recommended that these functions be used very sparingly to avoid unnecessary system load that can potentially affect playback performance.

3.3. Manual Automation Execution

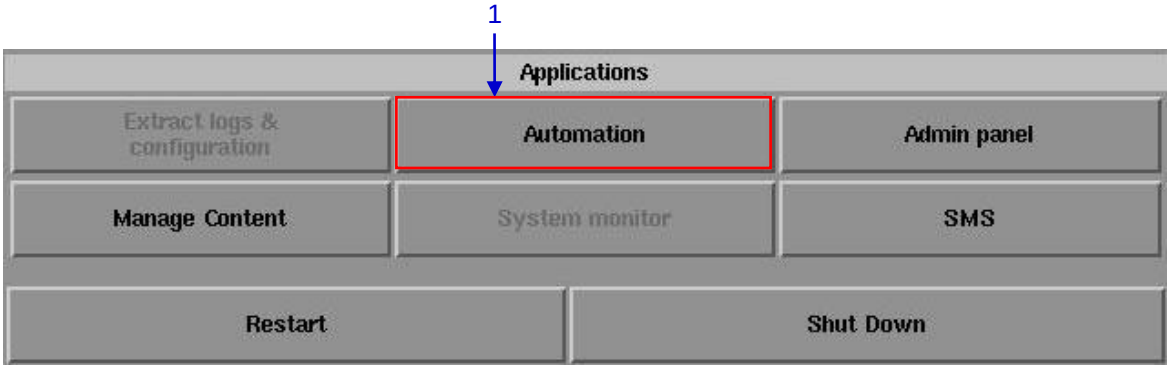


Figure 17 Accessing Automation.

1	Automation labels and projector commands can now be executed from an interface on the Control Panel. Press Automation on the Control Panel to start the manual automation interface as shown in **Figure 17**.

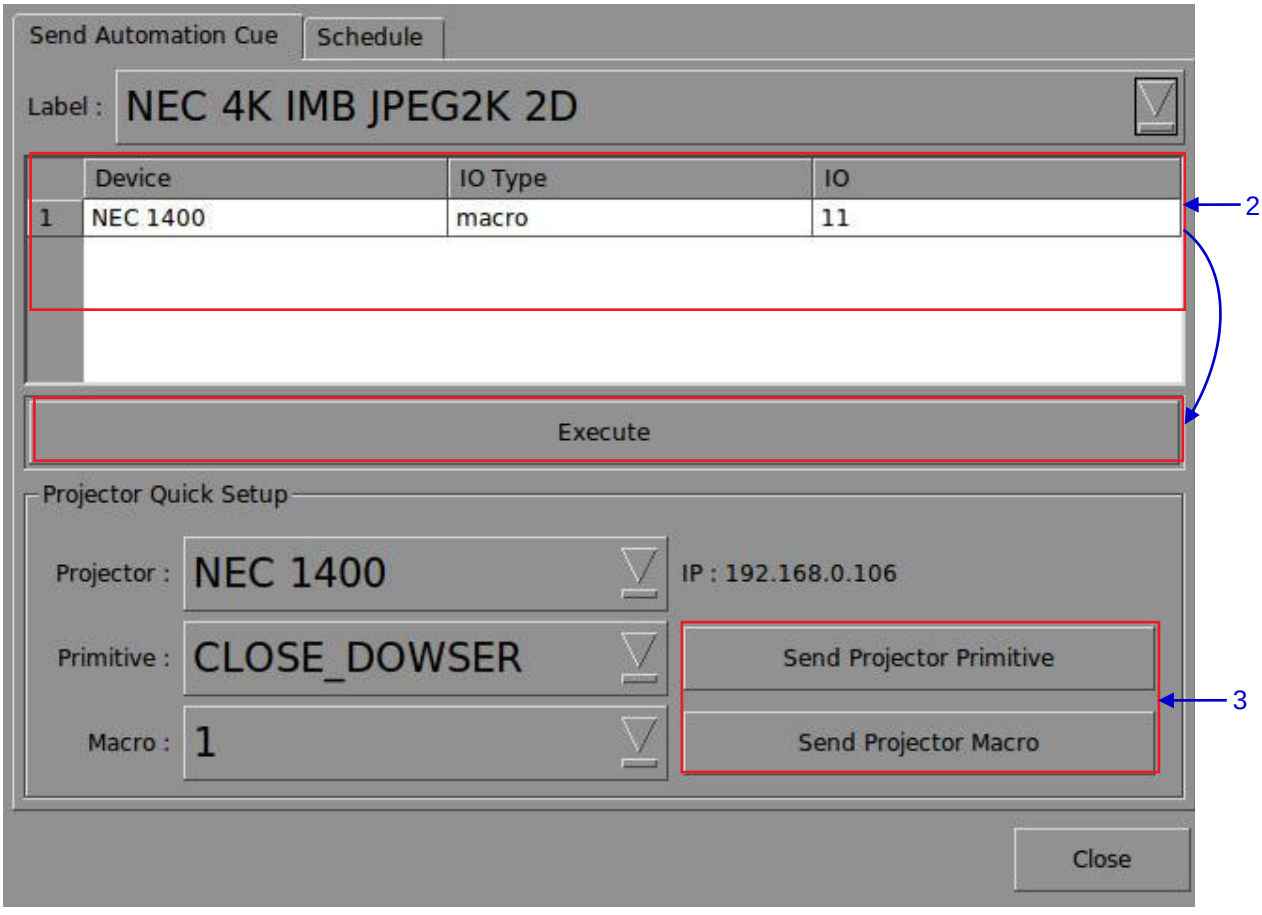


Figure 18 Executing Automation.

2	A new window opens as seen in **Figure 18**. Select an automation label to view the actions associated with the label. Press Execute to execute the automation label.
3	When a projector is configured for automation, projector primitives and macros can be triggered from this interface as well. Select the projector primitive or macro to be executed, and click the Send Projector Primitive or Send Projector Macro to send the command to the projector.

4. CONTENT MANAGER

4.1. About the Content Manager

4.1.1. Introduction

The SX-3000 Content Manager allows the user to manage the contents of the IMB to:

1	Download content from a disk or source on the network.
2	Download keys [KDM's] required for playing back content from disk or source on the network.
3	Delete content that exists on the IMB.
4	Check that the content that is already on the IMB is fine and the files are complete and proper.

4.1.2. Accessing the Content Manager

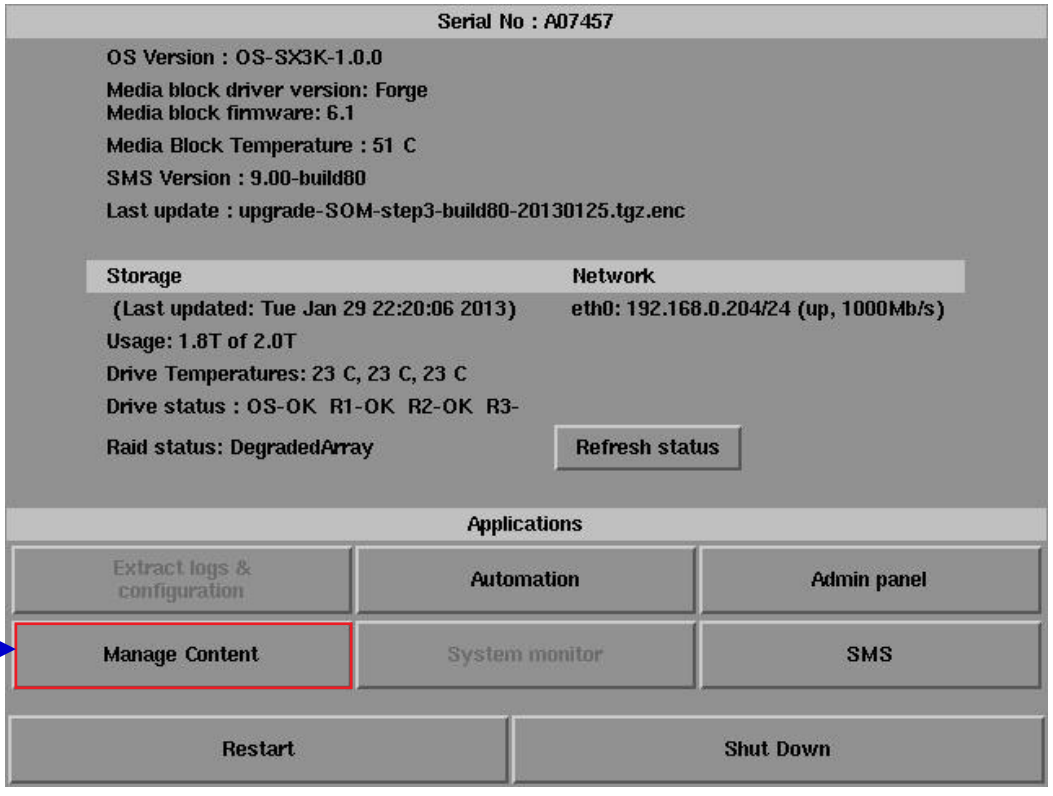


Figure 19 Manage Content Button.

1	Press Control Panel on the Main menu.
2	Press Manage Content to go to the Content Manager main menu. ***NOTE:*** *The Content Manager can run in the background and does* ***NOT*** *need to be exited.*

4.2. Content Management

4.2.1. Ingesting Content

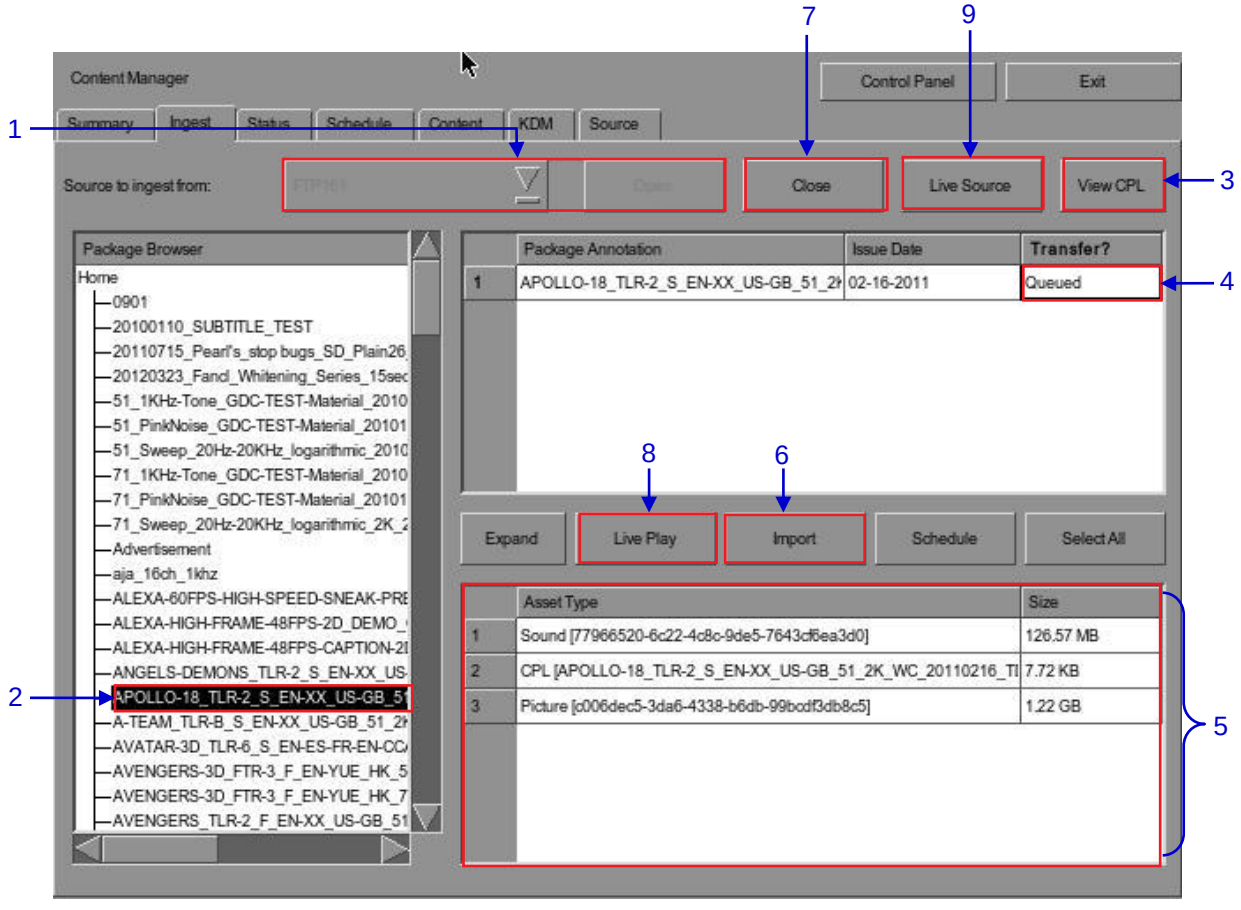


Figure 20 Ingesting a package or CPL from a source located in a specific directory in the network.

1	Select the source of data you want to ingest content from and click Open.
2	Browse the source and select the directory where the package is located. The list of packages in the directory will be displayed in the top right section of the screen.
3	Click View CPL to display the list of CPLs available in the packages. You can use this button to toggle between the package list and CPL list displayed in the top right section of the screen.
4	Click under the Transfer column to select the package or CPL you wish to download. A green check ✓ indicates a selected package or CPL. You can select multiple packages or CPLs.
5	Information about the selected package or CPL, including the file size, is shown in the section below the package or CPL list.
6	Press Import to queue downloading of the package or CPL. (To bypass ingestion for direct playback you can press Live Play instead. Refer to Live Play below for more info.)
7	When done selecting the package(s), click the Close button. ***IMPORTANT:*** *Always press Close after you are done starting the download of content. You can monitor the progress of ingest by pressing the Status button. Please refer to Section 4.2.4. Monitor Ingest Progress for more information about Status.*
8	Live Play can be used instead of Import in order to bypass content ingestion and play directly back from network source. This is not supported through USB but can be used for direct playback through network source (provided the network source has sufficient bandwidth to stream the content). ***IMPORTANT:*** *You should always use Import whenever possible.*
9	When you press the Live Source button you can view all clips currently mounted and available through the Live Play feature. You can detach Live Play sources through this interface as well. You should always detach live play sources whenever you are done using them via Live Play.

4.2.2. Ingesting Content from USB Disk

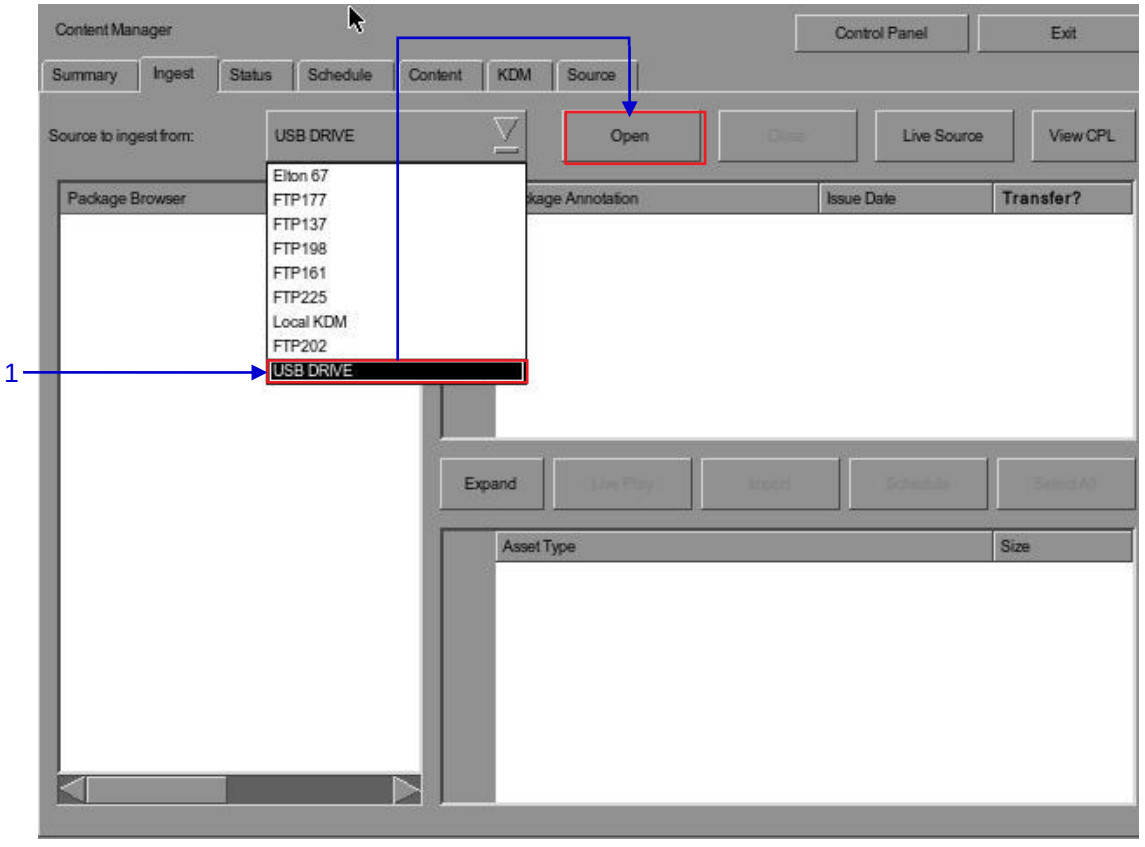


Figure 21 Opening a USB disk connected to the IMB.

1	Select USB drive from dropdown list and click Open. (Continued on next page)

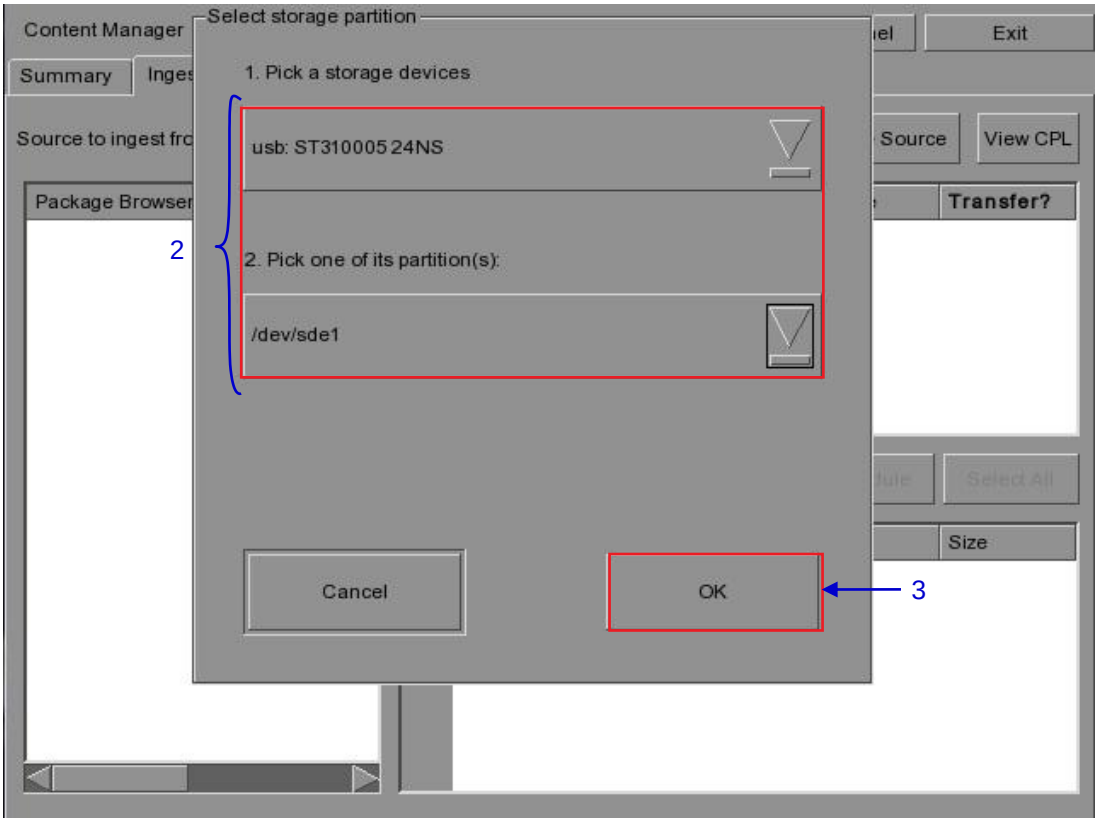


Figure 22 Selecting the USB storage device and its partition

2	Select a storage device and its partition from the dropdown lists.
3	Press OK to confirm the selection.

4.2.3. Ingesting KDMs

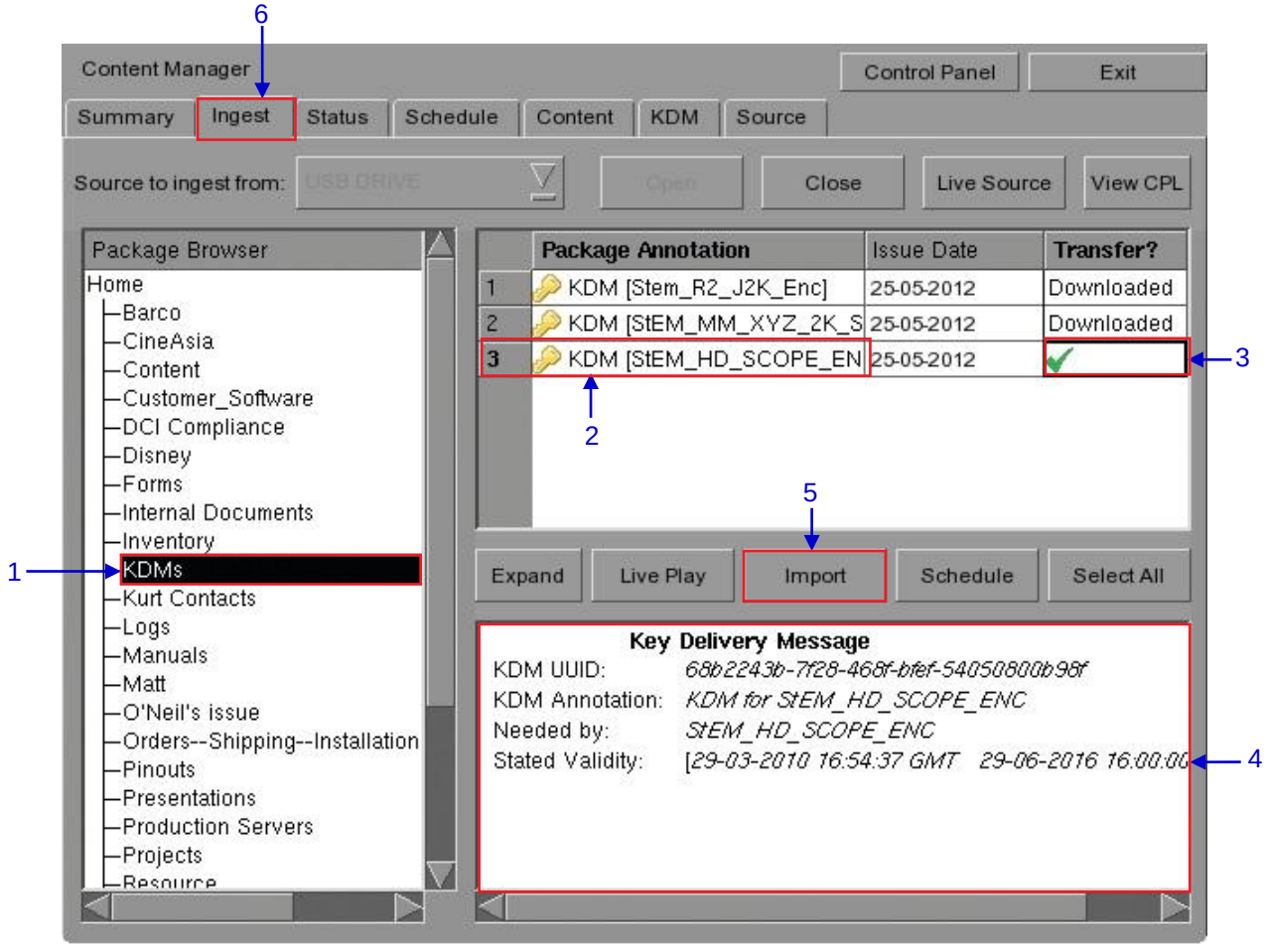


Figure 23 Ingesting KDM from a directory in the selected source.

1	Select the directory in the selected source where the KDM is located.
2	Shows the KDMs present in the selected directory that are valid for this IMB.
3	Click under the Transfer column to select the KDM you wish to download. A green check ✓ indicates the selected KDM.
4	Shows the details of the selected KDM, including target, CPL, and date of validity.
5	Press Import to start the import of the KDM. The green check will change to Queued.
6	When done selecting the KDM, press Close to close the Package Browser.

4.2.4. Monitor Ingest Progress

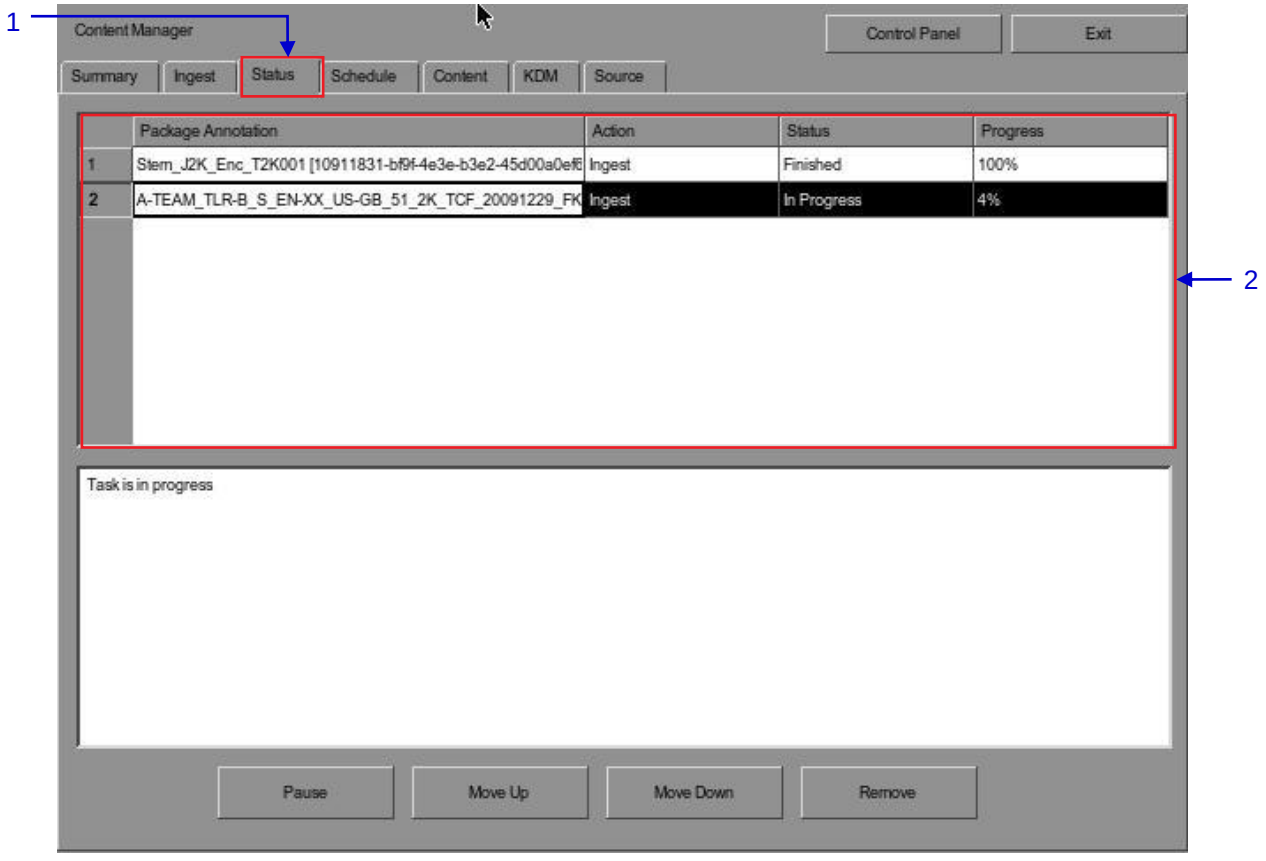


Figure 24 Monitoring the progress of download of the packages.

1	Select the Status option.
2	Shows the download status of the packages or CPLs. In this example, downloading of some packages or CPLs is incomplete.

4.2.5. Cancelling Ingest

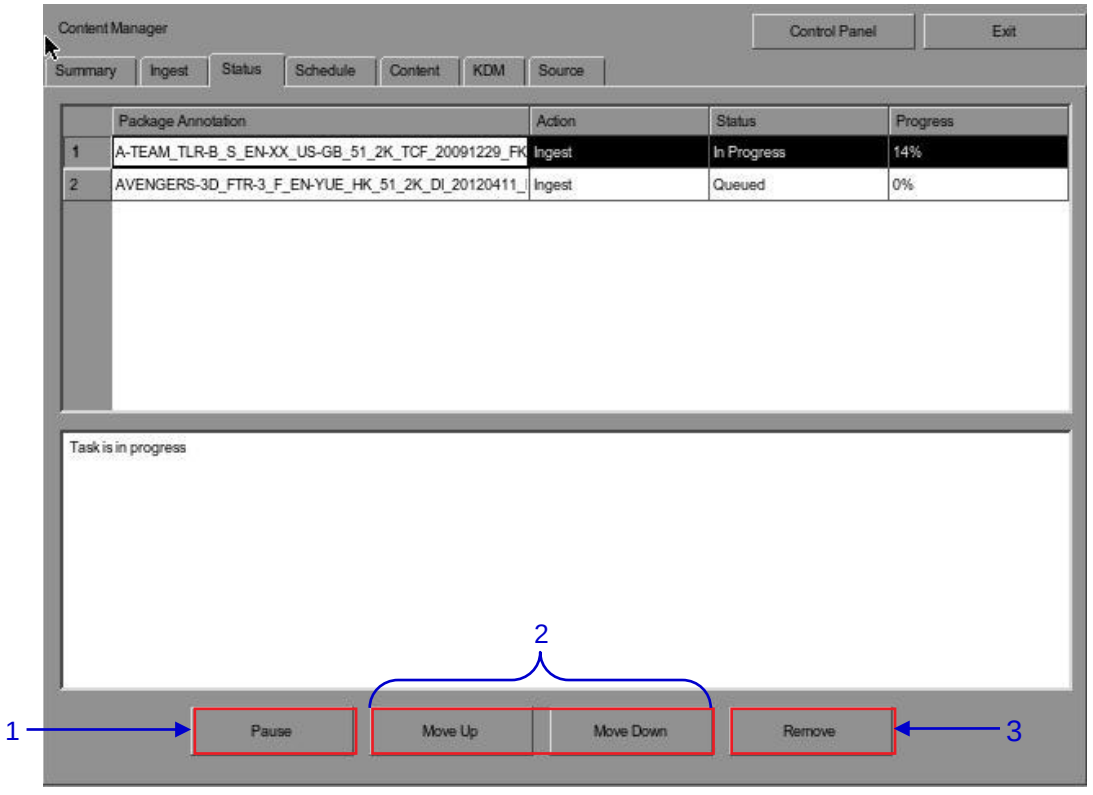
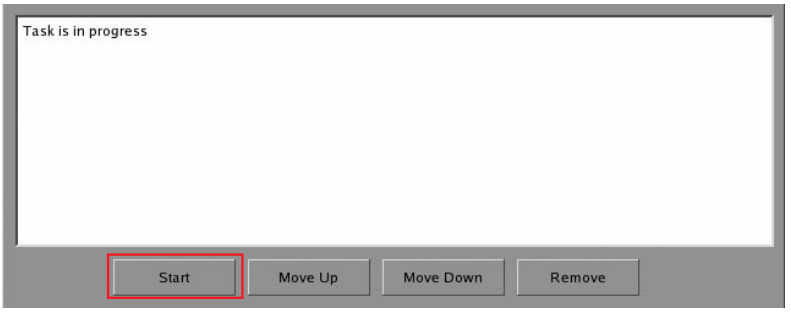


Figure 25 Content Manager - Status

1	Press Pause to temporarily stop the download of the package(s) or CPL(s). The Pause button will change to Start and will indicate that the download is being paused. 
2	Use the Move Up and Move Down buttons to move the highlight bar up and down to select the desired package or CPL when multiple packages or CPLs are being downloaded. You can only move the highlighted bar to select the package or CPL when in Pause mode.
3	To cancel the download, select the desired package or CPL and press Remove.
4	If you wish to resume download, press Start button to resume the download.

4.2.6. Deleting Content

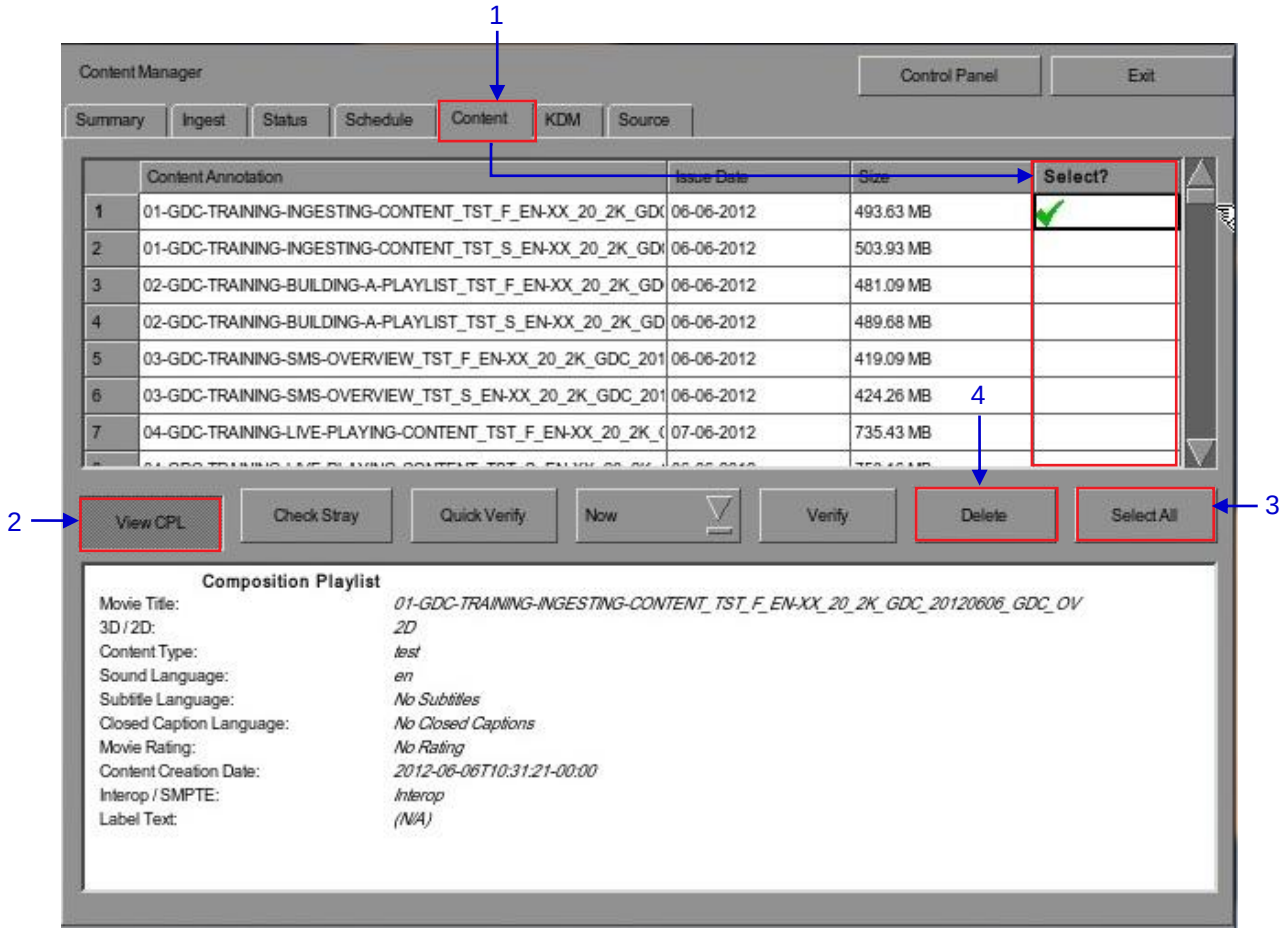
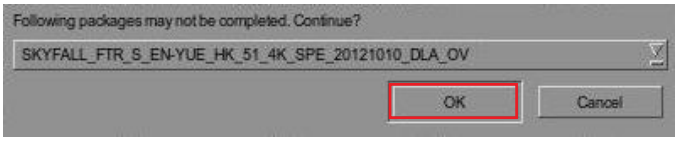


Figure 26 Deleting a downloaded package or CPL

1	To delete a package or CPL, go to Content menu and click under the Select column opposite the package or CPL you want to delete. A green check ✓ indicates the selection.
2	Click View CPL to toggle between the package and CPL lists displayed in the content menu.
3	You can select all by clicking the Select All button, and deselect by clicking the Deselect All button.
4	Press Delete to delete the selected package or CPL. A small window pops up to confirm the deletion of the package.  Press OK to confirm.

4.2.7. Checking Content Integrity

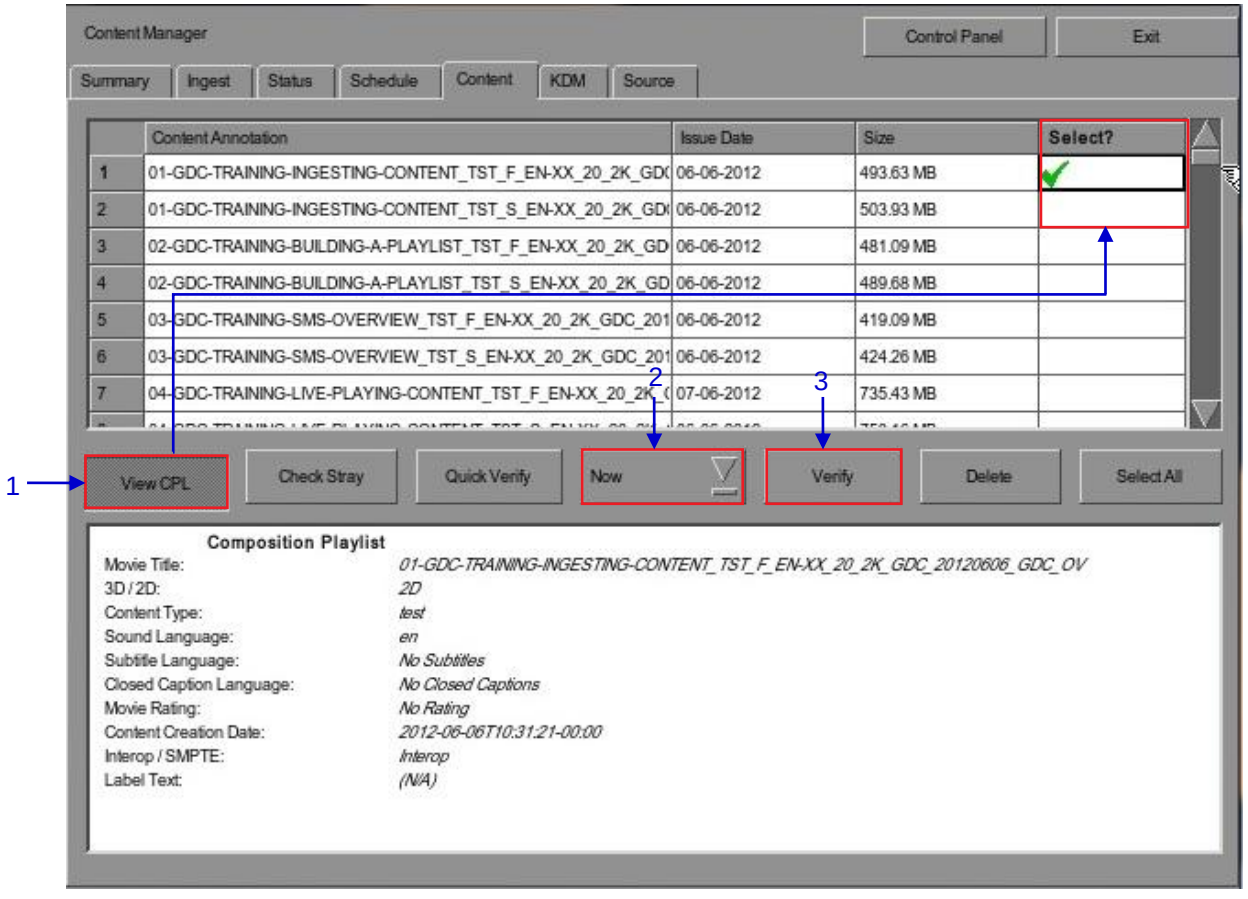
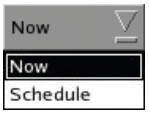
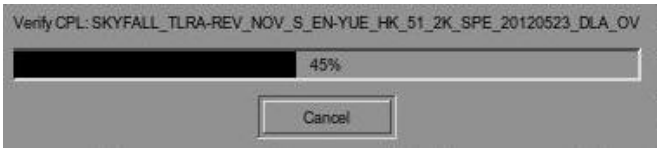


Figure 27 Verifying the integrity of the files in the package(s) or CPL(s).

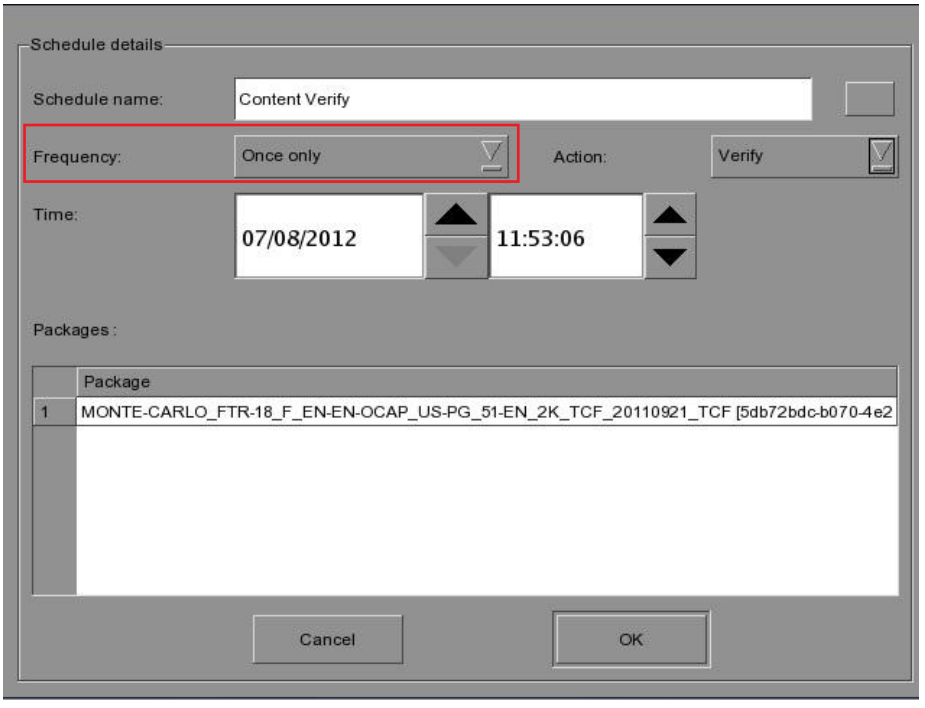
1	Click View CPL to toggle between the package and CPL lists displayed in the content menu. Click under the Select column opposite the package or CPL you want to verify. A green check ✓ indicates the selection.
2	Select if you want to verify Now or on a Schedule. 

3 Press Verify to check if all the required files are present in the selected package(s) or CPL(s).

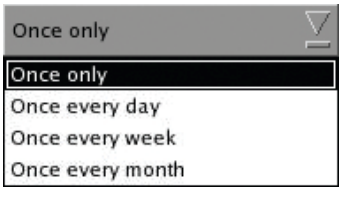
(a) If Now is selected, the package will be verified immediately as seen below.



(b) If Schedule is selected, you need to assign a name and schedule the time and date when to verify the package(s) or CPL(s) in a new window as seen below.



(c) You can select the frequency of verification.



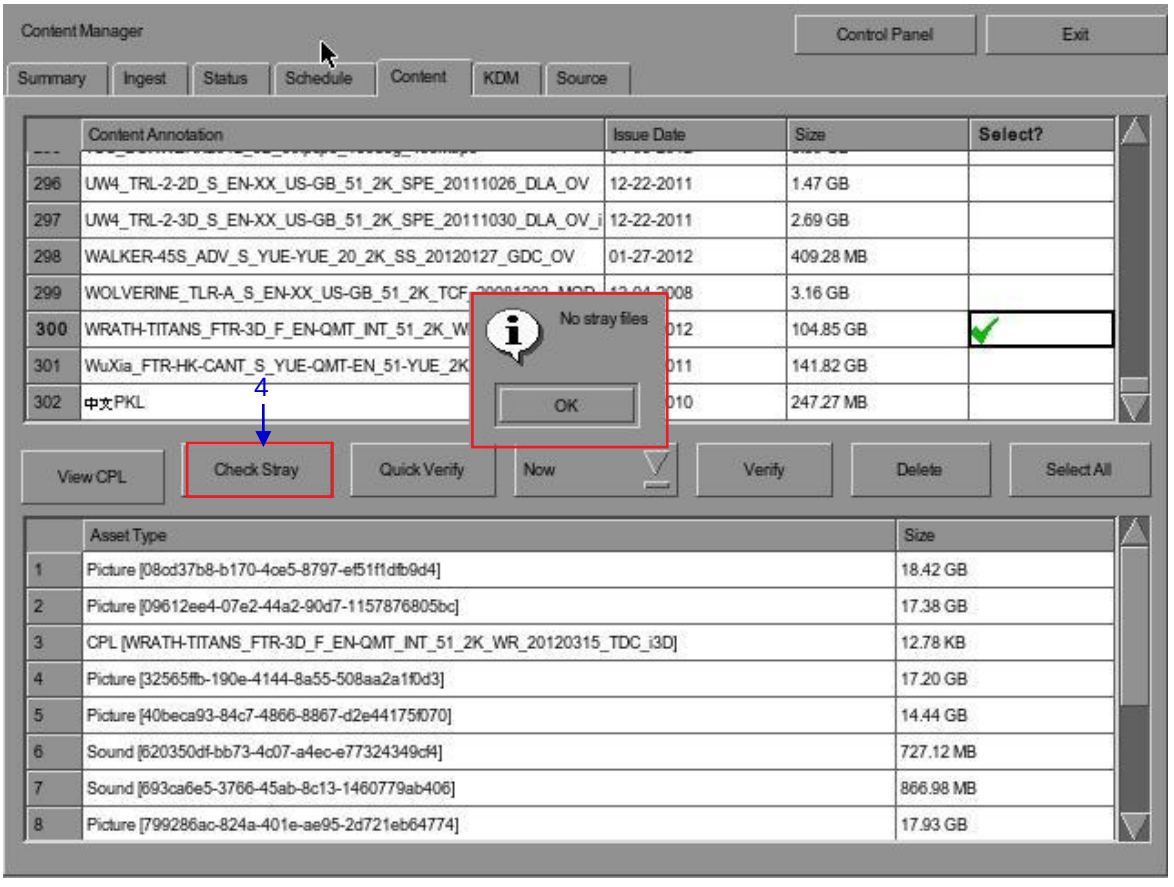


Figure 28 Checking for stray files in package(s) or CPL(s)

4	You can check if there are stray files in the selected package(s) or CPL(s) by pressing Check Stray. A small window pops out to confirm if there are no stray files.

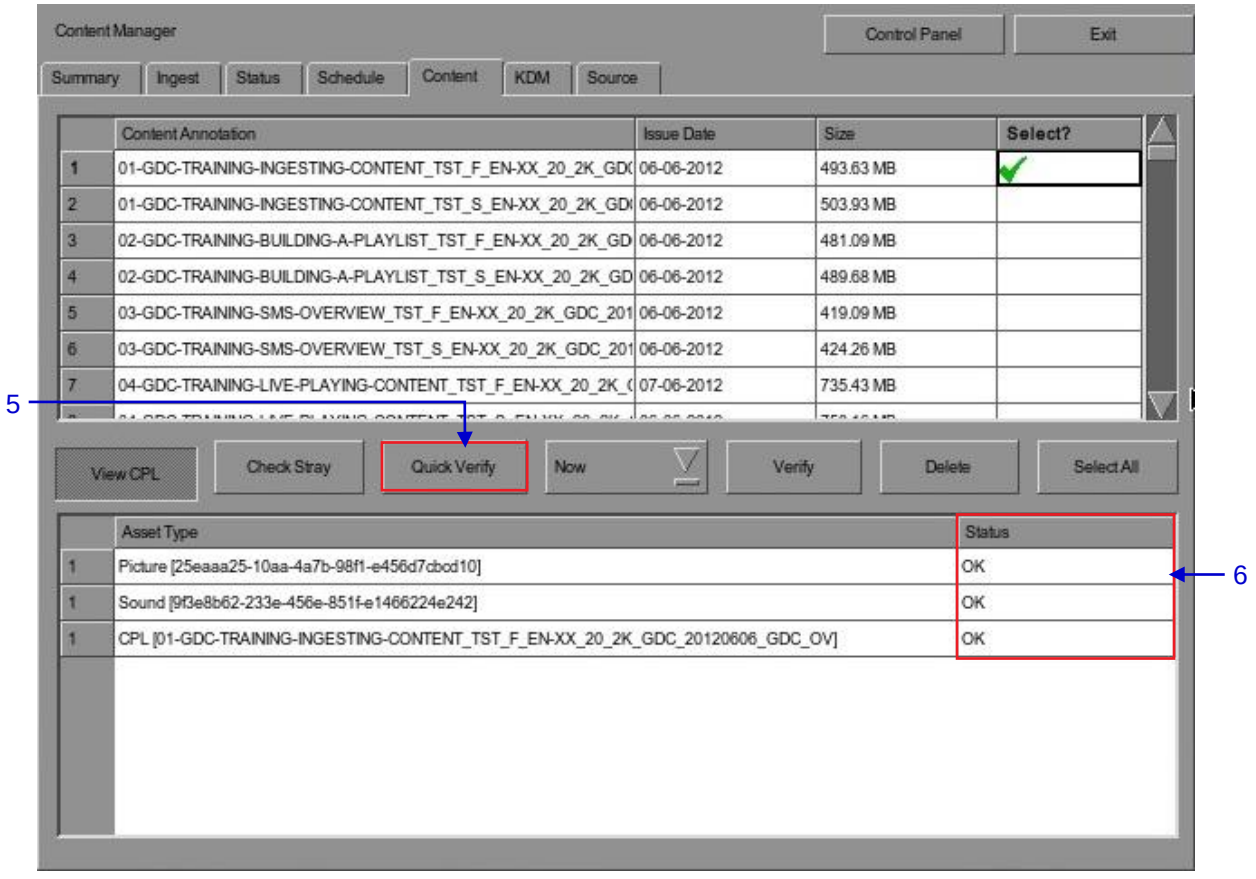


Figure 29 Package [Quick Verify]

5	Select Quick Verify to quickly check the integrity of the files in case it is modified or corrupted by calculating hash for each file in the selected package(s) or CPL(s).
6	You will see OK under the Status column after verifying that no problems are detected. If errors are found, the description of the error will be shown instead as seen in Figure 28 above. ***NOTE**: If there is an error in the selected package, it will indicate Failed under the Status column.*

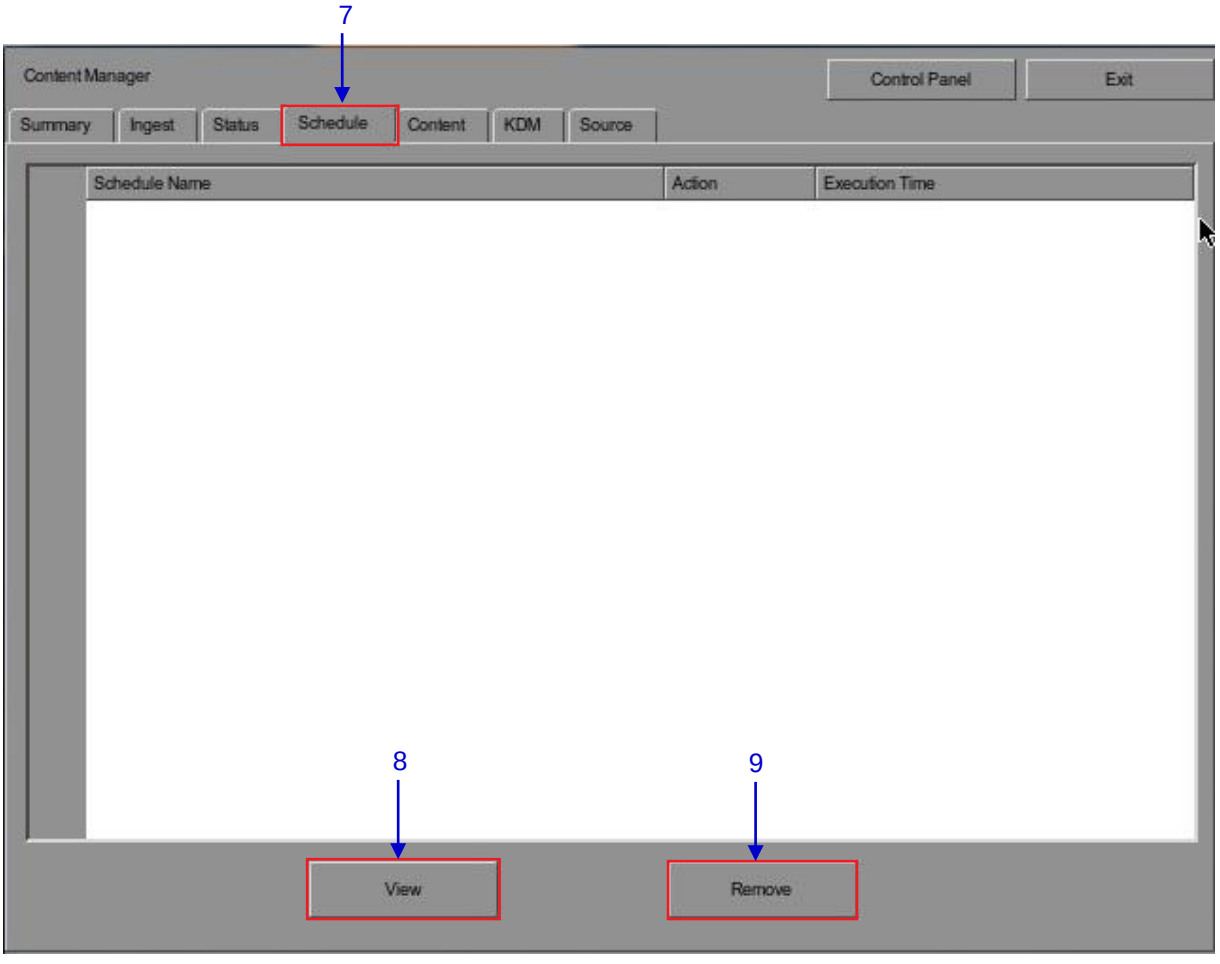


Figure 30 Content Manager [Schedule].

7	You can view the list of package(s)/CPL(s) that you have scheduled for verification by selecting the Schedule option.
8	Select the desired package or CPL and press View to see its schedule details.
9	Select the desired package or CPL and press Remove to delete it from the schedule list.

4.3. KDM Management

4.3.1. Manage KDM

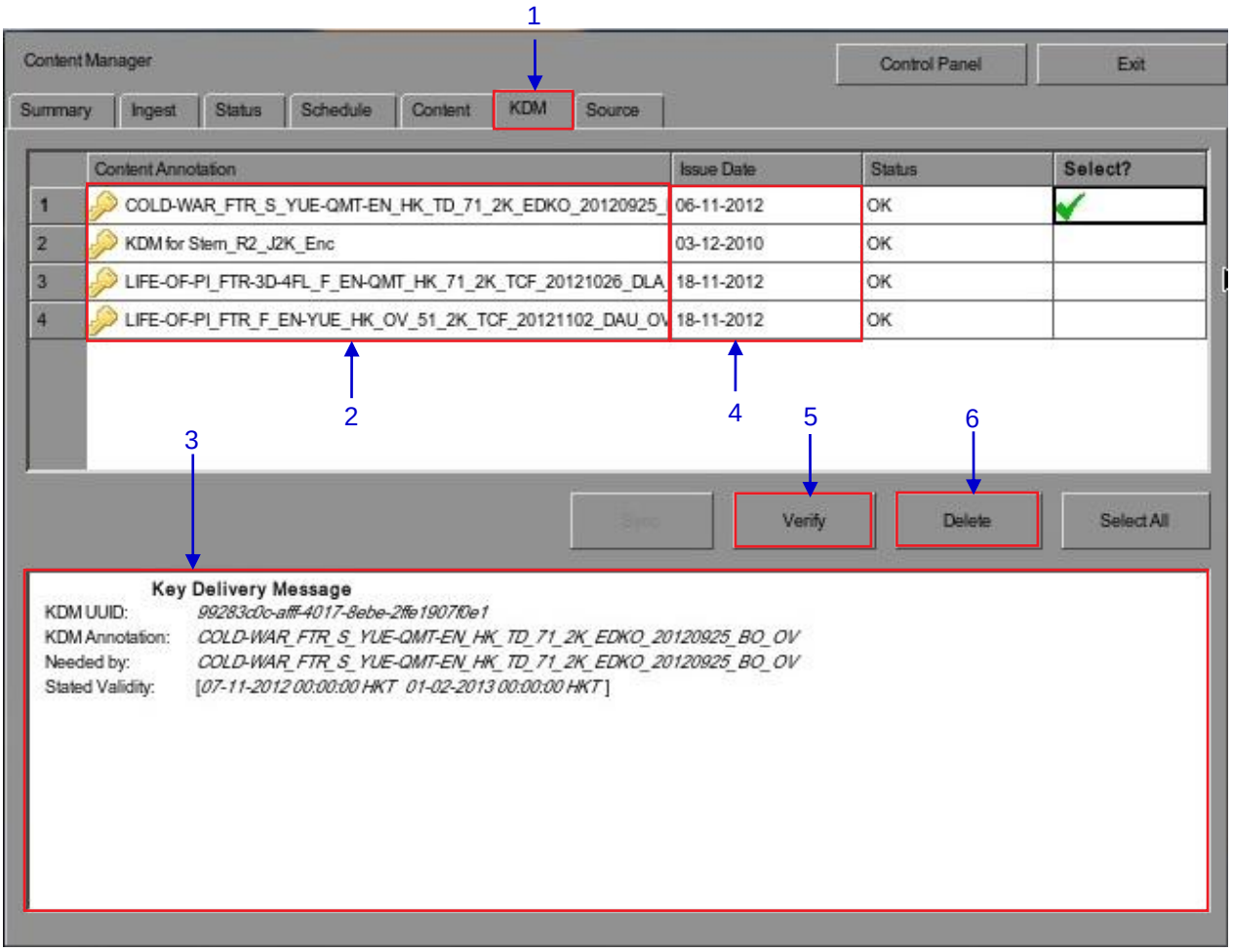


Figure 31 KDM Manager.

1	Select the KDM tab in the Content Manager menu.
2	Show the KDMs present in the selected directory that are valid for this IMB.
3	Show the details of the selected KDM, including target, CPL, UUID and date of validity.
4	Display date of issue for KDM.
5	Verify the integrity of the KDM.
6	Delete removes KDM from the IMB.

5. IMB OPERATION NOTES

5.1. Power Up Sequence

Always power up any external storage (PSD-3000-U/P, or external NAS) before powering up the projector. The external storage must be powered up first to be correctly identified by the SX-3000.

5.2. Power Down Sequence

Always power down the SX-3000 system and projector with the following steps:

1. Power down the SX-3000 by using the SMS -> Shutdown button.
2. Power down the projector after the SX-3000 is powered down.
3. Power down any external storage attached to the SX-3000.

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ISO 9001 QMS

Cert. No. CN09/32221

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